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THE IMPACT OF PROPOSITION 2 1/2 ON PUBLIC EDUCATION IN THE
WATERTOWN, MASSACHUSETTS SCHOOL SYSTEM:
A LONGITUDINAL STUDY 1980 - 1984

A Dissertation Presented

by

ANTHONY T. DIIESO

Submitted to the Graduate School of the
University of Massachusetts in partial fulfillment
of the requirements for the degree of

DOCTOR OF EDUCATION

February 1987

Education

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ABSTRACT

THE IMPACT OF PROPOSITION 2 1/2 ON PUBLIC EDUCATION IN THE
WATERTOWN, MASSACHUSETTS SCHOOL SYSTEM:
A LONGITUDINAL STUDY 1980 - 1984

February 1987

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This study examines the impact of Proposition 2 1/2 on the Watertown Public Schools over the period 1980-1984. Watertown, having been identified as being one of the most severely impacted communities, was ideally suited for a study. This longitudinal study demonstrates the impact of Proposition 2 1/2 on the following: the amount of money appropriated for public schools; the educational services delivered to students; the pupil-teacher ratios in K-6 classrooms and 7-12 English classes; the number of professional personnel positions; and the proportion of students meeting locally established competency criteria.

In this investigation, the statements were set up in "null hypothesis" form. Each hypothesis was tested that the .05 level of confidence. A Chi-square probability test was used for hypothesis 5, while a binomial test was used for hypotheses 1 and 4, and a paired T-test for hypothesis 3.

The main findings are: 1) That there was no significant difference in the total money appropriated for the Watertown Public Schools during the four-year period to and including FY 84. 2) There were significant differences in educational services delivered to the children of Watertown in 1981-82. 3) There were no significant differences in the pupil-teacher ratios in K-6 classrooms and 7-12 English classes over a four year period. 4) There were no significant differences between the proportion of students meeting locally established basic minimum competency criteria during the four year period of the study.

This longitudinal study of the impact of Proposition 2 1/2 on the Watertown, Massachusetts Public School System reveals no clear statistical evidence to demonstrate an overall degeneration in educational services, nor significant increase in pupil-teacher ratio, nor drastic reduction in professional staff. Neither is there any proven impact on minimum competency test levels. Evidence indicates that the public schools in Watertown suffered a single year of decline and subsequently restored or even improved services.

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CHAPTER I

INTRODUCTION

Massachusetts is substantially below the national average of 50 percent of the local communities' budget expenditure for providing cities and towns with education. This researcher observed that Massachusetts continues direct reliance upon the local property tax as the primary source of school revenues through the 1984 academic year.

The passage of Proposition 2 1/2, limiting the increase of taxes to 2 1/2 percent of the assessment per year, placed education in direct competition with other city services for limited monies. The property tax has always impacted and limited equality of educational opportunities across Massachusetts; Proposition 2 1/2 was viewed by some as having a negative impact on all communities. Since 1980 the cost of education is increasing at an annual rate well over six percent, in fact, rate increases for special education students in Massachusetts for the 1983-84 school year alone increased an average of 17 percent -- clearly a devastating percentage increase. Public education had its back to the wall. There was simply nowhere else to cut expenses after three years of Proposition 2 1/2 without affecting the quality or quantity of educational programs. Excess seating capacity has been greatly eliminated by school closings. There has been a substantial reduction in force leaving thousands of teachers unemployed. In the first year of Proposition 2 1/2 curriculum offerings were altered. Drama, music, art and sports programs have been reduced or eliminated as were numerous extra curricular activities.

Statement of the Problem

Paul Smoke (1983) reporting on the impact on principle appropriations during the first two years of proposition 2 1/2 for The Impact, 2 1/2 Project, MIT noted that changes in appropriations were significant but unevenly affected departments. "Police and fire seem to have been the most protected categories, while schools, libraries, and parks and recreation suffered severe cuts in some communities." (Smoke, 1983)

The Massachusetts Department of Education documented the impact of Proposition 2 1/2. It stated that total school expenditures dropped by \$136.0 million in 1981-82, meaning the average school district lost \$350,00 or 5.5% of its budget before 2 1/2. Seven out of ten districts reduced budgets in 1981-82; in fact, the districts with reduced budgets were responsible for the education of over 80% of the school children in Massachusetts. (Massachusetts Acts 1980, Ch 580)

Table 1 below indicates that 273 of the 379 operating school districts had more pupils per teacher in 1982 than in 1981.

TABLE 1
Change in Pupil-Teacher Ratios
1980-1981 to 1981-1982

<u>Units of Change</u>	<u>Number of Districts</u>	<u>Percentage of Total</u>
+ 3 to +10	30	8.0
+ 2 to + 3	47	12.5
+ 1 to + 2	83	22.1
0 to + 1	111	29.5
-10 to 0	105	27.9

One of the conclusions of the report of the Massachusetts Department of Education (Jan. 83) from which the table is drawn is that "after controlling for other sources of revenue including increases in state aid -- it appears that declining enrollment and budget cuts assumed about equal importance in determining changes in the number of teaching positions."

Other investigators, Katherine L. Bradbury and Helen F. Ladd confirm the conclusions of the Massachusetts Department of Education's report that substantial reductions in overall budget required corresponding reduction of school budgets. They call for a substantial increase in state aid, easing the impact of revenue losses caused by Proposition 2 1/2. (Massachusetts Department of Education, 1983)

Massachusetts' excessive reliance on the local property tax was the voters' chief motivation for supporting Proposition 2 1/2 and had to be addressed. It was commonly thought that most of the increases in the growth taxes (income and sales tax) would ease the immediate loss of revenues and meet future revenue needs.

Unlike California, Massachusetts was not in the luxurious position of having a huge state surplus of seven billion dollars. The Speich and Weiner study stresses that public education in California has not been seriously hurt by the passage of Proposition 13. Billions in state surplus was sent back to the cities and towns. School systems were able to maintain budget levels and in most cases provide for inflationary increases, a situation which could not be duplicated in Massachusetts.

In light of the aforementioned, this researcher selected one community, Watertown, Massachusetts, to investigate if there were statistically significant differences in the:

1. amount of money appropriated for public schools;
2. educational services delivered to students;
3. pupil-teacher ratios in K-6 classrooms and 7-12 English classes (English classes were chosen because this is the one subject every student must take every year);
4. number of professional personnel positions;
5. proportion of students meeting locally established competency criteria.

The Bradbury and Ladd study of the financial impact of Proposition 2 1/2 found that fourteen cities and towns were the most heavily impacted in the state of Massachusetts; among these cities was Watertown, Massachusetts.

Hypotheses

The principle hypotheses tested in this study and stated in the null form are as follows:

Hypothesis 1. When corrected for personnel contracted increases and cost of living increases as determined by the Department of Labor statistics for the Greater Boston Region, there was no significant difference in the total money appropriated for the Watertown Public Schools during the four year period up to and including FY 84.

Hypothesis 2. In 1981-82, the first budget year following the passage of Proposition 2 1/2, there were no significant differences in

educational services delivered to the children of Watertown as compared to FY 81.

Hypothesis 3. There were no significant differences in the pupil-teacher ratio in K-6 classrooms and 7-12 English classes for the school year 1980-81 and school year 1983-84 in the Watertown Public Schools.

Hypothesis 4. There were no significant differences in the professional personnel positions between the 1980-81 school year and the 1983-84 school year.

Hypothesis 5. There were no significant differences between the proportion of students meeting locally established basic minimum competency criteria as determined by the Massachusetts Test of Basic Skills and the Stanford Achievement Test results during the four year period 1980-81 to, and including, the 1983-84 school year.

Definition of Terms

The following definitions apply to the terms found in this study:

APPROPRIATIONS: Money set aside by a governmental unit, such as a town, the state or federal government, for a specific use.

BINOMIAL FORMULA: Means two names or classes; only two possible outcomes. Applies to groups of things which can be divided into two distinct classes.

CHAPTER 70: A section of the Massachusetts General Laws concerning school funds and state aid for public schools. The purpose is to promote the equalization of educational opportunity in the public

schools by equalizing the burden of the cost and reducing reliance on the local property tax. (Finnegan, 1986, p.106)

CHAPTER 188: The Massachusetts law to improve the public schools ensuring educational excellence and equity. Its funds must be used for new or additional programs. (Finnegan, 1986, p. 314)

COMPULSORY AND BINDING ARBITRATION: The parties to a contract, police and fire unions can declare an impasse and force contract disputes into binding arbitration, where a third party would choose between the positions of labor and management and effect a contract settlement.

DEGREES OF FREEDOM: The number of degrees of freedom of a statistic is the number of measurements used in its calculation minus the number of restrictions imposed upon them. (Fischer, p. 229)

FISCAL AUTONOMY: Refers to the right of School Committees in Massachusetts to determine the level of appropriation it deems necessary for the annual support of public schools. (The passage of Proposition 2 1/2 eliminated fiscal autonomy.)

FULL AND FAIR CASH VALUE: Assessments required as of January 1, 1982 from cities and towns certifying that all property had to be accurately valued in relation to selling prices.

LEVEL OF SIGNIFICANCE: In statistical research the level of significance is usually set in the vicinity of .05 or less (Fischer, p.244)

LONGITUDINAL STUDY: An investigation of a problem covering a specific time span.

MASSACHUSETTS BASIC SKILLS TEST: A selected measurement for determining student minimum competency in reading, writing, mathematics and listening. Students who have failed any or all of these tests must retake the tests until they pass or are otherwise exempted.

PROPERTY TAX: A tax on real estate within the cities and towns, determined by the local government units.

PROPOSITION 2 1/2: the tax-limiting referendum approved by the voters of Massachusetts whereby local property tax increases were limited to 2 1/2% of the full and fair cash value and in addition any tax revenues from the property tax were limited to 2 1/2 % increase per year.

PROPOSITION 13: The tax-limiting referendum approved by the voters of California. Assessment of properties was limited to a maximum of 2% per year until the time of sale. Combined property taxes of all local government units were limited to 1% of the full value.

PUPIL-TEACHER RATIO: The average number of pupils per teacher within a school system, school, classroom or subject area.

REFERENDUM: The principle or practice of submitting to popular vote a measure passed upon or proposed by a legislative body or by popular initiative.

REVENUE BURDEN: determined by dividing the total revenues of the state and local governments by the total amount of personal income in the state.

SEVERELY IMPACTED COMMUNITY: cities and towns whose measure of revenue loss was 12% or greater between allowed FY 82 revenues and actual FY 81 revenues as a percent of gross expenditures, before new state aid.

STANFORD ACHIEVEMENT TEST (7TH ED.): A test based on national norms, tests reading comprehension, word study skills, concepts of numbers, math computation, math applications, spelling, language, vocabulary, listening comprehension and establishes mean grade equivalents, group percentiles, group stanines.

Background of the Problem

Proposition 2 1/2, a local property tax limitation initiative, appeared on the November ballot in Massachusetts in 1980. This referenda question, which was destined to become a law, was a way for the voting public to override the General Court and exercise the will of the people. The constant warnings to the voting public about a potential disaster with the passage of Proposition 2 1/2 were ineffective. The voting public determined change was needed, that the "system" needed to be altered. It appeared that Proposition 2 1/2 was the only vehicle the public had to express its dissatisfaction and it did so with a 59% favorable vote for the passage of Proposition 2 1/2.

Proposition 2 1/2 is an initiative law. It was placed directly on the ballot by gathering a total of 70,000 signatures. (Massachusetts Legislative Bulletin #6, 1980) The inaction and the inability of the Massachusetts General Court to deal with voter dissatisfaction provided a fertile background for the collection of petition signatures.

Rapidly rising real estate taxes were taking a greater share of an individual's earnings. Proposition 2 1/2 promised an absolute restriction of the property tax and a 2/3 reduction in the Massachusetts Auto Excise Tax among other features.

The following is a summary of Proposition 2 1/2 (Mass. Acts 1980, Ch. 580). This Act:

- Limits the property tax in each municipality to 2 1/2% of "full and fair cash value" or the percentage of full and fair cash value effective in FY 79 if that was lower than 2 1/2%.

- Municipalities that were at or below 2 1/2% in FY 79 but have raised that percentage since then must reduce their levies by at least 15% per year until they reach their FY 79 percentage.

- Municipalities that were over 2 1/2% in FY 79 must reduce their property tax levies by at least 15% per year until their levy total is 2 1/2 % of current full and fair cash value.

- Once the mandated limit is reached, the total property taxes levied may only be increased by a maximum of 2 1/2% annually, regardless of the growth of total full and fair cash valuations of property in the community. Thus, no matter how much existing and new property increases in value, the municipality cannot expand its tax level to service such properties and people. The only effect of additional valuation would be to decrease the local tax rate since there is a ceiling on the total tax levy.

- There are no items that may be counted as exemptions in determining the levy limit. Bonded indebtedness was subsequently made an exemption.

- Override. The levy limit may be exceeded by a specified amount or a higher percentage of full and fair cash value if approved by two thirds of those voting on the question at the biennial general election, or at an off-year election called by the legislature, although only a majority vote is needed to lower the levy limit below 2 1/2 %.

- Reduced the motor vehicle excise tax rate from \$66 per thousand dollars of valuation to \$25 per thousand of valuation. This affected the calendar year 1981 excise tax bills and all subsequent years. (Immediate loss of \$150 million to local governments statewide.)

- Provides that no governmental unit (counties) may assess individual municipalities more than 4% above the previous year's assessment.

- Prohibits future unfunded mandates, legislative or administrative, without local acceptance or full state funding.

- Requires the state to fund fully the cost of any law that grants exemptions from local taxes.

- Abolishes school committee fiscal autonomy.

- Abolishes compulsory and binding arbitration.

- Allows renters a state income tax deduction - 50% of the annual rent for a principal place of residence may be deducted from gross income in determining taxable income.

- Establishes procedures, both administrative and judicial, for the enforcement of the above.

Election Day, November 4, 1980, Question 2 - Proposition 2 1/2, an initiative petition of the Citizens for Limited Taxation appeared on the ballot. The proponents' and opponents' statements on this November 4, 1980 ballot were clearly a "call to arms" for both sides of the issue of tax limitation - Proposition 2 1/2.

Proponents' Statement - 7/14/80

Massachusetts property taxes are 70% above the national average. Public services are not 70% better here. Proposition 2 1/2 will cut the auto excise and abolish fiscal autonomy, which are unknown in most states.

Many municipalities are already at 2 1/2; the rest will reduce gradually. Proposition 2 1/2 encourages home rule by the prohibition of unfunded state mandates and by a provision allowing a local referendum override of the 2 1/2% limit. It treats renters fairly, giving them direct income tax relief.

High property taxes hurt fixed-income and young people most; business taxes are passed on to the consumer. The Massachusetts legislature cannot be depended upon to protect the taxpayer; special interests demand increased spending when unlimited revenue is available. Only voter-imposed tax limits will control public spending.

Opponents' Statement - 7/14/80

Proposition 2 1/2 is misleading., It fails to provide real property tax relief for the average homeowner. Renters will get nothing. Instead 2/3 of the tax break will go to big business.

Local control over community services will be weakened by Proposition 2 1/2. 86% of the state's population lives in communities that would suffer drastic cuts the first year of Proposition 2 1/2. The average municipal budget will be chopped 40%.

Serious cuts in police, fire protection, and education will result. But there's no guarantee that politicians will eliminate waste and patronage.

Proposition 2 1/2 takes away binding arbitration which avoids crippling strikes by police and firefighters. It forces state-mandated budgets on all cities and towns, no matter how different their needs.

If proposition 2 1/2 passes, communities would have to depend on state aid to balance their budgets. Yet Governor and legislature have repeatedly failed to help localities.

Citizens for Limited Taxation

Citizens for Limited Taxation (CLT) is an organization supported by thousands of taxpayers with an approximate membership of 15,000. Throughout its brief ten year history, its actions have been very successful. In 1976, CLT led a campaign that defeated a graduated income tax. Following this, in 1977, a citizens' petition drive to put a state tax limitation amendment on the ballot subsequently led to the gathering of 70,000 signatures to place Proposition 2 1/2 on the ballot (Boston Herald, Tuesday, Aug. 22, 1985).

Barbara Anderson, executive director for CLT, rose from the position of Secretary to be its Chief Executive Officer. Her interest in limiting taxes drew her to CLT which was the most effective tax reform organization in Massachusetts. "Barbara Anderson led the tax revolt of 1981, popularly known as Prop 2 1/2" (Boston Herald).

Justification of the Study

Initial Position on Proposition 2 1/2:

This researcher was an outspoken opponent of Proposition 2 1/2. I joined forces with the Massachusetts Association of School Committees, the Massachusetts League of Woman Voters and others in opposition to Proposition 2 1/2. Barbara Anderson, Director of the Citizens for Limited Taxation (CLT), represented a "conservative revolution." "Conservative revolution" meant an attack of the haves on the have-nots - the needy, the school children and even "motherhood." Having school administration and school committee background made this researcher a natural enemy of Proposition 2 1/2.

The first year's loss was almost 500 million dollars of revenues to the cities and towns of Massachusetts without any provision for the state to increase its local aid. Bankruptcy was a real possibility for communities. Full implementation of 2 1/2 in the subsequent two years would mean another 500 million dollars reduction in local revenues. Inflation, growing state-mandated expenses, such as pensions, unemployment compensation and assessments, and Chapter 766 would further compound the budget difficulties of municipalities. How could "one of sound mind" accept a 2 1/2 cap on municipalities while the Massachusetts Bay Transportation Authority and counties are capped at 4%? This further reduces the ability of municipalities to meet their needs.

Proposition 2 1/2 was anti-development; therefore, it could be viewed as anti-business. Many local Chambers of Commerce were to become opponents of Proposition 2 1/2. It required that any increases in total valuation would reduce the tax rate, but would not provide additional municipal revenue. This represented a forced curtailment in development because cities and towns would not be able to provide additional necessary public services such as sewers and water lines. This anti-development nature of Proposition 2 1/2, coupled with the potentially negative impact on the municipal bond ratings, would certainly create an anti-business climate in Massachusetts.

This researcher recognized that major state-wide tax increases and/or revenues from user fees, and/or a drastic reduction in state services would be required in order to provide communities with

additional assistance to maintain the status quo. Furthermore, the poorest communities had the highest service needs, but the lowest property valuation and the highest tax rates. How is it possible to support a new law which treats the richest and the poorest communities the same?

This researcher's initial position on Proposition 2 1/2 was tested by a longitudinal in-depth study of the Watertown Public Schools in the period 1980 through 1984. This longitudinal study demonstrated the impact of Proposition 2 1/2 over a significant time span, therefore allowing an objective evaluation of specific dollar ramifications in all budget categories coupled with positive and negative educational changes over a four year period.

Watertown, having been identified as being one of the most severely impacted communities, is ideally suited for the longitudinal study undertaken by the writer. Bradbury and Ladd gave Watertown the highest loss-of-revenue rating in Massachusetts, a rating of "E or greater." The rating represents an instant revenue gap created by the passage of Proposition 2 1/2. This was referenced on the difference between allowed FY 82 revenues and actual FY81 revenues as a percent of gross expenditures, before new state aid.

This researcher is of the opinion that the knowledge revealed by a systemic study of a single community, Watertown, can provide a useful base or body of information which may assist other researchers involved in similar studies of single or multiple communities.

Scope of the Study

The purpose of this research was to examine the impact of Proposition 2 1/2 on the Watertown Public Schools over the period 1980-1984.

A review of the literature concerning national and state trends in the growth of tax limiting legislation was undertaken. The main research and analysis concentrated on the Watertown Public Schools as a community severely impacted by a tax limiting statute.

The investigation utilized a longitudinal in-depth study of the Watertown schools involving detailed budget analysis relevant to the school system's organizational pattern, K-12 curriculum offerings, educational equipment and materials, trends in test data and pupil-teacher ratio. The approach used in this study may be applicable to other Massachusetts communities.

Limitations of the Study

1. The study was restricted to one community and has no intention of dealing with problems on a regional, state or national scope in any detail whatsoever.
2. The depth of the longitudinal study was restricted to a base year and a three-year subsequent period because the problem is a current one.
3. Some data had to be adjusted to compensate for factors beyond the scope of the study; such adjustments are noted in the Analysis Section, Chapter IV.

4. Shifts in demographic data, such as different student populations each year, could not always be held constant. Changes in the nature of the community, from a working class to more elitist population, could not be taken into account in this study.
5. The psychological impact on faculty, students, parents and community at large was beyond the scope of this study.

CHAPTER II

REVIEW OF THE LITERATURE

California's Proposition 13:

Massachusetts' Proposition 2 1/2 was motivated by the success of Proposition 13 in California; in fact, many states were to attempt the passage of tax or spending limitation laws in the Fall of 1980. This effort was seen by some as a natural extension of the conservative trend of a Republican presidential victory and the victory of more conservative Congressmen. Morgan notes that the "taxpayer's revolt" is the key factor in the conservative trend in American politics and "The Reagan administration has thus tapped and packaged concerns about taxation, the level and efficiency of government spending, inflation and economic productivity, and national assertiveness." (Morgan, Nov. 1981).

The November 10, 1980 issue of Education USA clearly reported that most states that had laws concerning tax or spending limitation on the ballot were defeated. The decision of voters to limit or not to limit spending or taxes varied with the economic and political climate inherent in each state. The following propositions were defeated: Oregon's Measure 6, which would have cut local income for schools by 45%, failed by a 2-1 margin. Utah's Proposition to eliminate the food sales tax and reduce property taxes by 50% and a law which proposed to remove the 75% state limit on educational funding were defeated. A South Dakota law to cut property taxes in half was defeated. This

would have cost the schools in South Dakota 600 million dollars.

Nevada's Proposition 6 which was based on California's Proposition 13 was defeated 2-1. Nevada's constitution required that it pass twice to become state law. It passed in 1979, but was soundly defeated in 1980. Arizona's Proposition 106 calling for a reduction in property taxes was defeated 2-1. Subsequently, Arizona passed a lottery proposal giving the schools additional revenues. Only Missouri, Massachusetts and California stand together in the passage of tax limitation laws. California's Proposition 13, being the first successful tax limitation law, requires a more detailed examination.

Proposition 13 has three key elements (Speich & Weiner, 1980): First, for the purpose of taxation a property's full value would be set at its estimated market value in 1975 or its price at the time of its last sale, whichever occurred later. Retention of the property by the same owner would restrict the increase in property value to a maximum of 2% per year, although at the time of sale its value would be the actual sale price. Second, the combined property taxes for all local government agencies would be limited to 1% of the property's full value compared to an average of 2.6% property tax rate in force in 1977. The only exception made to the one percent limit was for property taxes needed to retire bond issues. Thirdly, any state tax increase required a 2/3 vote of the legislature. Local governing units could not raise taxes. Taxes could be increased beyond the strict limitation by a 2/3 referendum vote.

Proposition 13 passed on a 65% to 35% vote based on a voter turnout of 67%, which was exceptionally high for a state and local election. There were 5.7 million votes cast for gubernatorial candidates and 6.7 million cast for Proposition 13. Over one million citizens were drawn to the polls for the sole reason of voting for or against Proposition 13. It becomes obvious that the issue brought the people to the polls. Political scientist Richard Brody concluded: "Enthusiasm for the Proposition 13 approach to property tax relief was wide spread and did not reflect merely the vote of special interests. All of the state's geographical, political, ideological, and economic divisions came out strongly for the measure. Proposition 13 will be seen in the light of these analyses, as truly the will of the people." (Speich & Weiner)

Tax cutting and tax limitation is not a liberal vs. conservative issue. Proposition 13, as did the future Proposition 2 1/2 in Massachusetts, had genuine populist appeal, cutting across party and philosophical lines. The universal appeal of Proposition 13 cannot be doubted: supported by 57% of the Democrats, 47% of renters, 42% of blacks, 43% of voters with public employees in the household and 45% of self-identified liberals. (Speich & Weiner, p.24)

Proposition 13 could have been stopped by the California legislature any time prior to 1977. Legislative failure to agree on a measure for reducing local property taxes in September, 1977, guaranteed the passage of Proposition 13. (Speich & Weiner). Kuttner noted widespread support for Proposition 13 was caused by rapidly rising

residential property values, corresponding taxes and the existence of a state surplus of about seven billion dollars. (Kuttner, 1980)

Baratz and Moskowitz (1978) wrote that three factors were crucial to understanding the support for Proposition 13. These were: "1) Property value inflation and high per-capita taxation; 2) a legislature that had failed to report out a tax relief bill; and 3) a governor with presidential aspirations who was sitting on a \$5 billion surplus."

These factors combined with the Los Angeles County assessor, Alexander Pope, releasing the 1978 tax bills prior to the election. These tax bills reflected an astronomical rise in property values and resulted in tax increases of thousands of dollars (Baratz and Moskowitz, 1978).

In the beginning public education in California was not seriously impacted by the passage of Proposition 13. A multi-billion dollar state surplus sent back to the local units of government cushioned the impact of Proposition 13. School systems were able to maintain budget levels and, in most cases overcome inflationary increases.

Serious decline in public education never materialized. Virtually no tenured faculty members were laid off. School systems maintained a varied and comprehensive curriculum. Community colleges remained tuition free and were able to maintain low tuition payments for higher education. On the other hand, public education was no longer growing and expanding, thus providing opportunities for promotion and professional staff positions for recent college graduates. There was a deterioration in teachers' morale and aspirations created by a general atmosphere of insecurity about the future. (Speich and Weiner) The situation changed in 1985.

Gary Hoban (Sept. 1979) supported the idea of a significant demoralization of teachers. Hoban noted that 36 California school districts sent termination notices to 28,809 teachers. Thousands of teachers, impacting the lives of hundreds of thousands of children, were uncertain of their future employment. Administrators, nurses, counselors, librarians, and educational support staff were equally impacted. The most significant consequence of the passage of Proposition 13 was the lessening of morale causing a deterioration of school staff's self-worth as professionals.

Hoban agrees that schools had superficially adapted well to the post Proposition 13 era. Except for the elimination of summer schools, there was very little obvious change. However, little notice was given to deferred or eliminated improvements in instructional programs, to replacing outdated equipment, to cancelled field trips and increased class sizes.

David Savage, an education writer with the Los Angeles Times, concludes that Proposition 13 has led to the State of California controlling the educational purse strings without interfering in the policy-making power of local school boards. He notes that the California state bureaucracy simply collects information and issues reports and curriculum guidelines. Solutions of educational problems have little to do with the issue of state control or Proposition 13. Savage concluded that it was the changing demographic patterns and declining public confidence in public education. Schools were viewed by many as "expensive and ineffective." (Savage, 1982)

Savage wrote about the Los Angeles school budget problem. He reported that the shortage of funds was totally caused by mismanagement. Further, he stated that enrollments have declined by 125,000 pupils (about 20% of the entire pupil population) in the past decade without a single school being closed.

Furthermore, according to Savage, the average per pupil spending increased from \$2,047 in 1977-78 to \$2,853 in the 1981-82 school budget. This \$806 increase in the per pupil cost in a four-year period matches the rate of inflation, demonstrating a positive picture of the impact of Proposition 13. (Savage, 1982)

Gurthrie (Sept. 1978, p. 13) clearly disagrees with David Savage. Gurthrie wrote that "Proposition 13 expedites the transition to a state school system," although the predicted program and employment holocaust never materialized. Prior to Proposition 13 in FY 78, the state funded approximately 45% of school district revenues. In FY 79 there was a dramatic shift to approximately 70% state funding. Greater state funding of public schools created a more stable and equitable economic base eventually reducing the power of local school boards and leading to the centralization of educational policy making.

The short-run impact of Proposition 13 and tax limitation laws was to cause a shift from local to state taxes. "The state share went from 40% of total education spending to about 75%. California has de facto state assumption of school finance." Kirst (Feb. 1978, p. 431) The local property accounts for only \$2 billion of a total expenditure of \$9.3 billion. Furthermore, Proposition 13 had huge negative effect

upon the morale of teachers. Potentially massive lay-offs created major psychological trauma among educators. Finally, there was centralization of school government at the state level. Local districts have been restricted in their revenue production ability to meet expected expenditures. Kirst (Feb. 1979)

Kirst (Nov. 1984) observed that a restructuring of federal, state and local interrelations was increasing the power of state control of education, thereby shifting the balance of power of control in education from the local to the state level. Specific examples of increased authority by the states in setting high school graduation requirements, textbooks and curricula revisions, the experimentation with longer school days and years, and the state government's providing the majority of the current operating funds for education were noted.

Karen Norton, Coordinator of Public Information for California School Boards Association (CSBA) reported the governor was allowing for an overall average increase of 3.9% for public education for 1981-82 while CSBA determined that inflation would require a 10% increase. California's ranking declined to 8% below the national norm and was then 37th among the states in relative expenditures for K-12 education. Other results were school closings, reduction in athletics programs and art, and the total lack of building maintenance. By 1981-82 the California School Board Association disagreed with Mr. Savage and the Speich and Weiner study, "In the Eye of the Storm." (Massachusetts Association of School Committee Journal, March 1981)

The Speich and Weiner study suggested some lessons for public officials and educators in other states, stressing some of the danger signals and realities in setting the stage for the public acceptance of tax limitation laws. Among these were: 1) The assessment of both business and residential property at the same rate, and rapidly rising real estate values are the primary signs. 2) The immediate impact of tax limitation laws was dependent upon the amount of surplus in the budgets. 3) The relationship between the governor and the legislative branch of state government in determining the amount of aid given to help school districts. 4) The impact of the tax limitation depended upon the size of the reduction combined with specific local factors. The most significant local factors are the enrollment patterns and the general condition of public education.

California's huge surplus created a climate where it was obvious that property taxes could be reduced without significant reduction in services. (Speich & Weiner)

Background for the Passage of Proposition 2 1/2 in Massachusetts

Edward P. Morgan wrote that a significant backdrop to the effects of Proposition 2 1/2 in Massachusetts was the federal government's emphasis on block grants which places the responsibility for many programs directly on the states, when the states and local units of government have decreasing ability to pay for social, educational; and community development programs. Morgan addressed the negative impact

of inflation and a steady decline in federal dollars for the support of education, in conjunction with the dramatic 33% reduction in spending on education in the 1983 federal budget as compared to the 1981 federal budget. (Morgan, March 1981)

Helen F. Ladd and Julie Boatright Wilson, in Explaining the Vote, base their study on half-hour telephone interviews conducted by a professional survey research firm two weeks following the vote. The sample was made up of over 1,500 household heads randomly selected from 58 Massachusetts cities and towns. The percentage of "yes" and "no" voters was compared to the actual state-wide vote. This study concludes that most Massachusetts residents did not want to reduce the level of public service. All respondents wanted, however, to make government more efficient and less corrupt. Both "yes" and "no" voters agreed that property taxes should be lower, but they failed to agree on any alternative sources of revenue.

When "yes" and "no" voters demonstrated large differences in their preferences and expectations on a given issue, it implied that "yes" voters were much more likely than "no" voters to believe Proposition 2 1/2 would lead to more efficient government. Massachusetts citizens expecting greater government efficiency was the reason for a large proportion of the vote on Proposition 2 1/2.

Charles Kenney (Globe Magazine, May 18, 1986) stated that many negative factors surrounded Massachusetts in the 1970's. Corruption in Massachusetts politics was rampant, high-lighted by the MacKenzie

and DiCarlo trials and the conviction of the two senators of extortion in the awarding of contracts for the construction of the University of Massachusetts-Boston. "The state's other political characteristics included a left-wing anti-business attitude, the perception of the state as 'Taxachusetts,' fiscal chaos, racial bitterness, and poor political leadership."

Interest in tax reform was not a major issue differentiating "yes" and "no" voters. "Yes" voters wanted a smaller public sector and a corresponding reduction in services, although this was not a major issue motivating the "yes" vote. Ladd and Wilson conclude that "the vote for Proposition 2 1/2 was more an attempt to obtain lower taxes and more efficient government than to reduce the level of public services or to alter the way public services are financed." These findings are consistent with survey findings from both California and Michigan. Efficiency and waste became the key issue activating "yes" voters in Massachusetts for several reasons: high and rising property taxes, changing economic conditions, and a tendency toward a more conservative political ideology. (Ladd and Wilson, 1983)

Edward P. Morgan deals with many of the same issues as Ladd and Wilson concerning Proposition 2 1/2. Morgan's study, Public Preferences and Policy Realities: Proposition 2 1/2 in Massachusetts, adds greater dimension to the Ladd and Wilson study. Morgan concludes that intensive support for Proposition 2 1/2 was centered in Eastern and Central Massachusetts primarily in suburban areas.

The one key factor common to all areas of the state that was clearly linked to the vote and totally independent of population characteristics was the local tax rate. "Local spending, increasing tax rates or spending levels, and the local levy or tax burden were not significantly related to the vote for Proposition 2 1/2." Attention was focused on the factor of tax inequity impacting homeowners of low property wealth communities. (Morgan) Morgan finds that support for Proposition 2 1/2 was generated by a drift of Massachusetts and the nation toward conservatism, general opposition to government spending and inefficiency, and a feeling of alienation from the political process. The vote for Proposition 2 1/2 could certainly be explained by a chance for "John Q. Citizen" to strike a blow. A majority of voters demonstrated their dissatisfaction with corruption and inefficiency in the local, state and federal governments. (Morgan)

Morgan and the Massachusetts State Department of Education agree that the data on the 1982 city and town budgets demonstrate that local school systems are bearing the brunt of the budget cuts required by Proposition 2 1/2 . Morgan concludes there is little tangible evidence that the vote for 2 1/2 reflects a particular discontent with local education. "However, school tax efforts were strongly related to support for Proposition 2 1/2. As a result, an effort to reduce school taxes as a policy response to the local vote, could increase educational spending inequities in the absence of additional redistributive state aid." (Morgan)

John F. Heffley, in a study conducted for the Massachusetts Advisory Council on Education, focused on educational spending inequities. This study utilized a comprehensive sampling of the attitudes and opinions held by educational and political leaders within 96 cities and towns in Massachusetts.

In 1975 Heffley recommended that: (1) all future attempts at school aid and reforms should be pursued within the framework reform for equalization of educational opportunity; (2) all future attempts at school aid reform should be pursued in relation to the total program of providing aid to cities and towns; and (3) the state share of funding public education should be increased through a planned incremental program to approximately 50%. (Heffley, Feb. 1975)

Helen F. Ladd and Katharine L. Bradbury concluded that Massachusetts property taxes being above the national average was caused mainly by the dependence of communities to finance services with the real estate taxes. The national average for local government revenue was 28% while in Massachusetts local government provided almost half of the revenues. (Bradbury and Ladd, Jan/Feb 1982)

Impact of Proposition 2 1/2 on Massachusetts

Proposition 2 1/2 reduced local tax revenues by \$490 million in FY 82 compared to FY 81, or by 14 percent. New state aid enacted in response to Proposition 2 1/2 replaces about half of this aggregate local government revenue loss. The first year revenue provisions of Proposition 2 1/2 combined with new state aid reduce the property tax share of local general revenues by 10 percentage points. However, even after these first year changes, Massachusetts local governments continue to rely more heavily on property taxes and to receive a smaller fraction of their revenues from state aid than local governments nationally. (Bradbury & Ladd, Jan/Feb 82)

Education in Massachusetts had relied so heavily on local property taxes for its funding that Proposition 2 1/2 was to have a dramatic effect on local school revenues. Furthermore, the elimination of the fiscal autonomy of local school committees meant that school budgets had to compete directly with all other facets of city or town budgets under the control of selectmen or counselors.

Paul Smoke concluded that the municipal appropriations changes during the first two years of Proposition 2 1/2 were significant. His data, collected by mail and telephone interviews, revealed that appropriations cuts were a significant factor in the first year adjustment to Proposition 2 1/2 but the specific impact on departments varied.

"Police and fire seem to have been the most protected categories, while schools, libraries, and parks and recreation suffered severe cuts in some communities. What emerged most clearly is that schools were called upon to bear the overwhelming proportion of total appropriations cuts. In some cases, schools were cut by substantially more than total appropriations in order to permit increase in some of the other categories." (Smoke, 1983) (See Table 1)

Smoke noted that the mix of appropriation changes was more varied in year two than in year one. It was once again open season in cutting school budgets. In general, most appropriation categories were increased in the second year of Proposition 2 1/2.

Smoke in Table 2, shown below, demonstrated how appropriations in Massachusetts were affected in the first year of 2 1/2. The average total appropriation declined by 5.6 percent in comparison from a consistent 10.8 percent annual raise in the 1976-1980 period. All categories demonstrated a sharp decline and a radical reversal of a growth pattern.

TABLE 2
MASSACHUSETTS APPROPRIATIONS CHANGES BY CATEGORY, 1981-1982
Percentage Change, 1981-82 Percentage of Total App. Change

	Mean	Standard Deviation	Median	Mean	Standard Deviation	Median
Schools	- 6.5	5.8	- 6.2	161.4	334.1	73.3
Police	- 0.5	18.1	1.5	-28.0	166.3	0.4
Fire	- 4.2	15.3	0.7	- 3.1	54.2	0.2
Streets	-10.6	20.7	- 8.0	14.8	57.2	6.8
Parks	-22.6	25.1	-12.0	- 0.5	27.1	1.7
Sanit.	- 4.2	37.3	0.0	3.5	17.8	0.6
Libraries	-10.1	13.7	- 6.4	0.9	11.3	1.2
TOTALS	5.6	7.7	- 4.1	---	---	---

A memorandum to school committee chairpersons, dated February 22, 1983, issued by the Commonwealth of Massachusetts Board of Education regarding the impact of Proposition 2 1/2 on local schools stated that local tax levies fell by 9% or 311 million during the first year of Proposition 2 1/2.

Drastic decreases in local tax levies coupled with the limit in levy growth brings about a decrease in the role of the property tax in supporting local services. "Unfortunately for the children of the Commonwealth, public schools absorbed the lion's share of these cutbacks." (Mass Board of Ed, Feb 23, 1983)

The purpose of the Board of Education Memo was to encourage all school committees to support an "earmarking" bill filed with the 1983 legislature to ensure that additional state aid would be distributed fairly at the local level. Requiring the equitable distribution was considered essential in view of the fact that in 1981-82 school spending dropped by 6% while total spending by cities and towns fell by 2%. The net decrease in total local spending was \$108 million. This inequality was compounded by an increase in non-school expenditures by \$28 million. In many communities the schools were forced to bear the brunt of the budget cuts required by Proposition 2 1/2.

Effects of Proposition 2 1/2 on Massachusetts School Districts:

A Report on the Effect of Proposition 2 1/2 on Massachusetts School Districts, 1981-1982 is crucial to any study concerning the impact of Proposition 2 1/2 on the economic and political foundation for public education in Massachusetts because it addresses the most significant concerns. The main topics reviewed were: changes in local revenues and spending, changes in school expenditures and revenues, school district staffing patterns, schools' position relative to other municipal services, the issue of the potential of pupils abandoning public schools, and the projected effects of Proposition 2 1/2 in 1982-83.

This report was prepared by the staff of the Bureau of Data Collection and Processing of the Department of Education and analysed the measurable effects of Proposition 2 1/2 on education in Massachusetts. Data was collected through the End-of-Year Pupil and Financial Report, Individual School Report and School System Summary Report.(Jan. 1983)

Proposition 2 1/2 forced major changes in local revenues and spending patterns in Massachusetts. A required \$456 million total revenue loss was imposed on the cities and towns through the Commonwealth. The legislature softened the loss in revenue by increasing local aid by over \$300 million. The cities and towns added or increased fees for services and reduced fiscal 1981-1982 expenditures, producing surpluses that would cover expenses of the subsequent year. State and local countermeasures account for the fact that local spending fell only \$108 million or 1.9% below the 1980-1981 levels of \$5.676 billion.

(Massachusetts Department of Education, Jan 83)

Total school expenditures dropped by \$136 million in 1981-1982, meaning the average school district lost \$350,000 or 5.5% of its budget before 2 1/2. The examination of the Table II will indicate that seven out of ten districts had to reduce their budgets in 1981-82. Fifty-three districts cut costs by ten percent or more; in fact, the districts with reduced budgets were responsible for the education of over 80% of the school children in Massachusetts. (Massachusetts Department of Education, Jan 83)

Table 3, below, shows the school committees expenditures, the percent of change, and the distribution of the number of school districts experiencing the damage in selected expenditure levels.

(Massachusetts Department of Education, Jan 83)

TABLE 3 MASSACHUSETTS SCHOOL COMMITTEE EXPENDITURES 1980-1981 to 1981-1982						
Percent Change in Expenditures	Actual Change (millions)	School Districts (Number)	%	1981 (Number)	Enrollment %	
-10 or greater	-65.0	53	13.7	170,479	18.0	
- 5 to -10	-72.4	104	26.9	420,144	44.0	
0 to -5	-13.2	119	30.7	191,876	20.0	
0 to +5	5.6	77	19.9	124,447	13.1	
+5 to +10	3.8	25	6.5	21,323	2.2	
+10 or greater	8.1	9	2.3	20,649	2.2	
<u>TOTAL</u>	<u>133.1</u>	<u>387</u>	<u>100.0</u>	<u>948,898</u>	<u>100.0</u>	

A decline in school expenditures necessitated a reduction in personnel, mainly teachers. The city or town councils were to determine the percentage of revenue allocated to the schools; in other words, "set the bottom line," while the school committees maintained the right to allocate these funds among the various expenditure categories.

School committees concentrated their efforts at decreasing expenditures by reducing or eliminating programs not mandated by law. Evening and adult education programs in most instances were to become self sufficient or be eliminated. Overall, local expenditures for

these programs fell 59.8% while fees increased 78.9% ; correspondingly enrollment declined 47.6%. Lunch programs were cut by 9.9 million or 54.4% while lunch fees were increased by 40% or \$7.0 million, causing a 27% decline in pupil participation in the lunch program.

Extracurricular athletic and student activity budgets were reduced by 21.4% and 28.5% respectively, while user fees increased 23.0%. New equipment purchases declined 36.2% and textbook budgets were cut by 29.7%. Perhaps the greatest savings came from the closing of 278 schools. (Massachusetts Department of Education, Jan 83)

Three areas of expenditure categories actually increased or were level funded. General administrative costs (central office) dropped only 0.2% and administrative support expenditures (accounting, data processing) declined only 0.3%, essentially level funding for the 1981-1982 school year. Transportation, insurance and employee benefits expenditures categories increased. There was a 7.9% decline in the number of pupils transported from the 1980-81 school year, with a corresponding 2.8% increase in cost. Insurance cost increased 26% and employee benefits were up by 12.0%. A dramatic increase in the final category was caused by the termination of hundreds of public school employees combined with a cash early-incentive retirement program for many more. (Mass. Dept of Ed. Jan 83)

School district staff reductions were significant throughout Massachusetts. In the first year of Proposition 2 1/2, 7,782 full time equivalency teaching positions were eliminated along with 9,355 non-teaching positions, a reduction of 14.3% of school district

staffing. Hardest hit categories were teacher aides, foreign language, art, drama, music teachers, librarians and audio-visual specialists (23%), reading teachers (22.2%) and guidance counselors (17.6%).

School committees had to make choices: music or English, art or math, guidance or science. There was no real choice. Proposition 2 1/2 limiting the power of cities and towns to raise revenue, coupled with the school committee's loss of fiscal autonomy, made the decision easy. (Massachusetts Department of Education, Jan 83)

The pupil-teacher ratio between 1980-81 and 1981-82 school years will highlight the correlation between budget cuts and declining enrollments. During this period the increase in the pupil-teacher ratio was more contributable to the reduction of teachers because of budget cuts and not declining enrollment. Table 4, p. 36, shows that 273 of the 379 operating school districts had more pupils per teacher in 1982 than in 1981. Thirty of these districts increased their ratios by more than three units. "After controlling for other sources of revenue - including increases in state aid - it appears that declining enrollment and budget cuts assumed about equal importance in determining changes in the number of teaching positions." (Massachusetts Department of Education, Jan 83).

Table 5, p. 36, shows the education share of the revenues in the majority of towns (60.4%) was reduced relative to other municipal services. An examination of Table 5 indicates these changes. Gain or loss is calculated in percentage units; for example, a town which went from 60.1% of total expenditures in FY 1981 to 59.5% in FY 1982 suffered a loss of -1.0 units. (Massachusetts Department of Education, Jan. 83)

TABLE 4
CHANGES IN PUPIL-TEACHER RATIOS IN MASSACHUSETTS
1980-1981 to 1981-1982

<u>Units of Change</u>	<u>Number of Districts</u>	<u>Percentage of Total</u>
+ 3 to +10	30	8.0
+ 2 to + 3	47	12.5
+ 1 to + 2	83	22.1
0 to + 1	111	29.5
-10 to 0	105	27.9

TABLE 5
School Costs as a Percentage of Total Local Costs in Massachusetts
Percentage Units of Change Fy 81 - FY 82

<u>Category of Unit Change</u>	<u>Number of Districts</u>	<u>Percentage of Total</u>	<u>Average % of Total in FY 81</u>
More than -5.0	46	13.7	64.1
-5.0 to -2.0	82	24.5	53.4
-2.0 to 0	75	22.4	52.7
0 to 2.0	68	20.3	54.9
2.0 to 5.0	44	13.1	60.5
more than 5.0	20	6.0	61.4
TOTAL	335	100.0	56.2

It should be noted that unit gain does not translate into an increased share of revenues for schools. One district went from 39.5% to 52.0% of the town's budget while school costs were cut by five percent. Its apparent but false gain was created by a total reduction of local expenditures of 28%. The education share of municipal expenditures has declined to the level of fiscal year 1977-78 at 53.9% (median share).

There is very little evidence to suggest that Massachusetts pupils are abandoning public schools. Table 6, below, shows the percentage of non-public school pupils increased from 11.50% to 12.36%. This slight upward trend seems to be a continuation of a trend which began in 1976.

Tables 6 and 7, below, demonstrate that Proposition 2 1/2 did not create a mass exodus to private schools. "In fact, units of change in the non-public enrollment percentages show no significant correlation whatsoever with change in teachers, integrated operating costs, tax levies, or property wealth." (Mass. Dept. of Ed., Jan.'83)

TABLE 6
Non-Public Pupils as a Percentage of Total Pupils in Massachusetts
FY 81 and FY 82

% Non-Public Enrollment	# of Cities & Towns in FY 81	% of Total	# of Cities & Towns in FY 82	\$ of Total
0.0 - 2.5%	86	24.5	73	20.8
2.5 - 5.5%	86	24.5	70	19.9
5.0 - 7.5%	50	14.2	65	18.5
7.5 - 10.0%	44	23.5	32	9.1
10 - 12.5%	30	8.5	43	12.3
12.5%	55	15.7	68	19.4

TABLE 7
Units of Change in Non-Public Percentage of Total Pupils, Massachusetts
FY 81 - FY 82

Category Label	Number of cities and Town	Percentage of Total
Below -1	26	7.4
-1 to 0	60	17.1
0 to 1	136	38.7
1 to 2	69	19.7
2 or more	60	17.1
TOTAL	351	100.0

Bradbury and Ladd confirm the conclusions of the Massachusetts Department of Education's report that substantial reductions in overall budget required corresponding reduction of school budgets. Fiscal autonomy of local school committees was no longer the protector of education in Massachusetts. Indeed, the total amount appropriated was subject to the will of the local legislative body. "School spending was apparently disproportionately affected by Proposition 2 1/2."

The Massachusetts study by Bradbury and Ladd, like the Speich and Weiner study in California, proposes that enactment of substantial new state aid is essential in softening the revenue losses caused by Proposition 2 1/2. New state aid would ease the immediate impact of Proposition 2 1/2. (Bradbury & Ladd, March/April 82)

Bradbury and Ladd develop the argument that enactment of large amounts of new state aid was essential for maintaining services.

Massachusetts' excessive reliance on the property tax was the voters' chief motivation for supporting Proposition 2 1/2. The means or types of taxes needed are not addressed. The authors envisioned most of the increases in the growth taxes, income and sales tax, would ease the loss of revenues and the ability of communities to raise revenues equally. A new state aid formula could respond to "interlocal variations in both service needs and resources. Such equalizing aid would reduce the spending disparities in needs and revenue-raising capacity." (Bradbury & Ladd, Mar/Apr 82)

Morgan agrees with Helen Ladd and others that the overall impact of Proposition 2 1/2 was inequitable. Cities had to bear the largest burden of lost revenues under Proposition 2 1/2; cities, being the home of lower income citizens, largely minority and service dependent populations, were therefore unable to find alternatives to public services. Tax limitation has promoted greater local efficiency and some local property-tax relief. The need for increased state funding is recognized. "Clearly, the taxpayers' revolt --in conjunction with Reagan's New Federalism --sharply increases the fiscal pressures on state government in Massachusetts." (Morgan)

The subsequent revenue loss grouping, coupled with cities and towns in each population, gives a state-wide profile of the impact of Proposition 2 1/2. This profile begins on the next page. (Bradbury & Ladd, Part II)

Massachusetts Profiles of Revenue Loss:

Cities and Towns in Each Population Group
with Revenue Loss Group ID

NOTE; 39 CITIES are all CAPITAL LETTERS; 312 towns are initial capitals only. Population groups based on data from 1980 Census of Population.

Revenue loss group codes: measure of revenue loss is difference between allowed FY82 revenues and actual FY81 revenues as percent of gross expenditures, before new state aid.

A 0-3% loss	B 3-7%	C 7-10%	D 10-12%	E 12% +	
Population 500 to 5,000					
Ashburnham	D	Hadley	A	Princeton	A
Ashby	E	Hampden	C	Provincetown	A
Ashfield	B	Hancock	B	Richmond	A
Barre	B	Hardwick	B	Rochester	A
Becket	E	Hatfield	D	Rowley	B
Berkley	A	Hinsdale	A	Royalston	B
Berlin	C	Holland	A	Russell	B
Bernardston	A	Hopedale	D	Rutland	B
Blanford	D	Hubbardston	A	Sandisfield	A
Bolton	A	Huntington	A	Savoy	A
Boxborough	B	Lanesborough	E	Sheffield	B
Boylston	B	Leverett	A	Shelburne	C
Brimfield	A	Marion	A	Sherborn	A
Buckland	A	Mashpee	A	Shutesbury	A
Carlisle	A	Mendon	B	Southampton	A
Charlemont	B	Merrimac	C	Stockbridge	A
Cheshire	E	Middleton	B	Sunderland	B
Chesterfield	A	Millville	D	Tisbury	A
Clarksburg	D	Monterey	B	Truro	A
Colrain	A	Nahant	A	Upton	E
Conway	A	NewBraintree	A	Wales	D
Cummington	A	Newbury	A	Warren	D
Deerfield	B	NewMarlborough	A	Warwick	D
Douglas	D	New Salem	A	Washington	D
Dover	A	N.Brookfld	A	Wellfleet	B
Dunstable	B	Northfield	A	Wenham	A
Eastham	A	Oak Bluffs	A	W.Brookfield	C
E.Brookfield	B	Oahkam	A	Westhampton	A
Edgartown	A	Otis	A	W. Newbury	A
Egremont	A	Paxton	B	W.Stockbridge	B
Erving	B	Pelham	A	W. Tisbury	A
Essex	A	Peru	E	Whately	A
Florida	A	Petersham	B	Williamsburg	C
Gill	A	Phillipston	E	Windsor	A
Goshen	A	Plympton	A	Worthington	E
Granville	A				

Population 5,000 to 10,000

Acushnet	A	Harwich	A	Plainville	B
Ashland	D	Hopkinton	A	Raynham	B
Avon	A	Hull	D	Rehoboth	A
Ayer	B	Kingston	C	Rockport	A
Belchertown	A	Lakeville	A	Salisbury	A
Blackstone	A	Lancaster	A	Sandwich	B
Bocford	A	Lee	D	Shirley	C
Brewster	A	Leicester	A	Southborough	A
Carver	B	Lenox	C	Southwick	A
Charlton	B	Lincoln	A	Sterling	A
Chatham	A	Littleton	A	Stow	A
Cohasset	A	Lunenburg	E	Sturbridge	A
Dalton	E	Manchester	A	Sutton	A
Dighton	A	Mattapoisett	A	Templeton	D
Dudley	B	Maynard	E	Topsfield	A
EastBridgewater	D	Medway	E	Townsend	B
Freetown	B	Millis	C	Tyngsborough	A
Georgetown	A	Monson	B	Uxbridge	B
Granby	A	Montague	C	Ware	B
GreatBarrington	A	Nantucket	A	West Boylston	B
Groton	B	Norfolk	A	WestBridgewater	E
Groveland	B	Norwell	E	Westminster	B
Halifax	D	Orange	D	Williamstown	A
Hamilton	A	Orleans	A	Winchendon	A
Hanson	E	Pepperell	B	Wrentham	B

Population 10,000 to 25,000

Abington	D	Harvard	A	Saugus	C
Acton	A	Hingham	C	Scituate	E
Adams	A	Holbrook	E	Seekonk	A
Amesbury	B	Holden	B	Sharon	D
Athol	E	Holliston	E	Shrewsbury	B
Auburn	B	Hudson	E	Somerset	A
Bedford	A	Ipswich	A	South Hadley	C
Bellingham	C	Longmeadow	A	Southbridge	A
Bourne	A	Ludlow	B	Spencer	B
Bridgewater	E	Lynnfield	A	Stoneham	E
Burlington	E	Mansfield	A	Stoughton	D
Canton	E	Marblehead	A	Sudbury	B
Clinton	D	Marshfield	D	Swampscott	D
Concord	B	Medfield	B	Swansea	A
Danvers	A	Middleborough	B	Tewksbury	E
Dartmouth	A	Milford	D	Wakefield	E
Dennis	A	Millbury	D	Walpole	B
Dracut	B	NEWBURYPORT	E	Wareham	C
Duxbury	D	NORTH ADAMS	A	Wayland	A
E. Longmeadow	A	North Andover	A	Webster	A
Easthampton	C	N. Attleboro	E	Westborough	A
Easton	E	Northbridge	A	Westford	C
Fairhaven	B	North Reading	A	Weston	A
Falmouth	A	Northborough	A	Westport	A
Foxborough	C	Norton	E	Westwood	B
Franklin	D	Oxford	C	Whitman	E
GARDNER	B	Palmer	B	Wilbraham	D
Grafton	B	Pembroke	E	Wilmington	E
Greenfield	E	Reading	B	Winchester	B
Hanover	D	Rockland	D	Winthrop	D
				Yarmouth	A

Population 25,000 to 50,000

Agawam	B	EVERETT	E	NORTHAMPTON	D
Amherst	B	FITCHBURG	D	Norwood	A
Andover	A	GLOUCESTER	B	PEABODY	E
Arlington	E	HAVERHILL	C	Plymouth	A
ATTLEBORO	D	HOLYOKE	C	Randolph	E
Barnstable	A	LEOMINSTER	C	REVERE	D
Belmont	A	Lexington	A	SALEM	C
BEVERLY	E	MARLBOROUGH	D	TAUNTON	D
Billerica	E	MELROSE	E	Watertown	E
Braintree	E	Methuen	B	Wellesley	E
Chelmsford	C	Milton	E	W.Springfield	B
CHELSEA	D	Natick	D	WESTFIELD	D
Dedham	D	Needham	A	WOBURN	E

Population Greater than 50,000:

BOSTON	D	LAWRENCE	C	PITTSFIELD	D
BROCKTON	D	LOWELL	C	QUINCY	C
Brookline	E	LYNN	D	SOMERVILLE	D
CAMBRIDGE	C	MALDEN	D	SPRINGFIELD	C
CHICOPEE	C	MEDFORD	E	WALTHAM	E
FALL RIVER	C	NEW BEDFORD	C	Weymouth	D
Framingham	D	NEWTON	E	WORCESTER	C

As shown in the lists above, of cities and towns in each population group with revenue losses identification, from A being equal to a maximum loss of 3% through E being a maximum loss of 12% or more. Of the 106 towns listed in the population category of 500 to 5,000, seven (7%) were classified as E. In the 5,000 - 10,000 population category, of the 75 towns listed, five (7%) were classified as E. Larger towns and cities were more severely impacted. Of the 91 towns in the 10,000 - 25,000 population, 16 of the 91 listed (or 18%) were classified as E.

Watertown was in the 25,000 - 50,000 population listing and was one of the 12 of 39 listed as E. This population grouping was the most seriously impacted, with 31% facing revenue losses of 12% or more. Of the 21 communities with populations of 50,000 and over, 4 (or .19%) were listed as E.

Summary:

This researcher observed that Proposition 2 1/2 has permanently altered the economic and political foundation of public education in Massachusetts. Prior to Proposition 2 1/2 school committees had unlimited power to increase school department expenditures for operations; and the community legislative bodies would be required to increase the local property tax which was the main source of revenue for school operation expenditures. This concept of fiscal autonomy for all local school committees, except for Boston, was designed to free public education from constantly battling in the arena of local politics. The only check on the local school committee was the necessity of members to run for election every two or three years. Pressure or special interest groups had demanded that the school committees provide services, believing that the school committees were omnipotent.

Loss of fiscal autonomy has realigned the politics of education in Massachusetts. No longer could school committees require local legislative units to support all school operation appropriations. Proposition 2 1/2 made it possible for town meetings and city councils to set the bottom line, meaning the total dollar amount, on school

operation budgets. In fact, the local legislative units could not increase but could reduce the total dollar requests of school committees. What school committees retained was the right to decide on specific line items in the school department budgets. This gave school committees the dubious privilege of deciding how to spend fewer dollars on increasing and more expensive services.

Loss of fiscal autonomy for school committees has clearly shifted the balance of power to the local legislative units. Demands from special interest groups are immediately referred to town councils, who were given control of the "purse strings." There was a shift in political power and educational decision-making responsibility in the post Proposition 2 1/2 era. The entire local government structure became responsible for education. This sharing of the educational responsibility can be a positive force for building community support for public education. It has required greater communication among the many diverse elements in the community, thereby constantly educating the public that the schools are a vital concern to all citizens. It also rendered accountability less attainable.

Proposition 2 1/2 has certainly improved the efficiency of local government. Schools were closed immediately with the passage of Proposition 2 1/2, that otherwise would have remained open for years. Proposition 2 1/2 was a partial mask or the political shield in the closing of many small neighborhood schools, while declining enrollments accompanied by excess seating capacity required that action be taken. The elimination of waste and inefficient use of school facilities was a

first step. Expenditure reductions had to be made in educational programs and extra curricular activities and class sizes increased. Proportionately, the largest and poorest communities suffered most initially under Proposition 2 1/2.

Revenue crisis at the local level created by Proposition 2 1/2 forced the General Court to find new sources of funds to be given directly to the cities and towns. (DiIeso, Table 2, p. 30) Long months of debate and many amendments resulted in an increase in state aid to the cities and towns of over \$300 million, thereby greatly softening the impact of 2 1/2. This massive infusion of state aid which saved many communities from economic collapse, forced a shift in the basic economic and political foundation of education in Massachusetts. Proposition 2 1/2 created a political and revenue climate which forced the state to assume a greater economic and political role in education.

Massachusetts Revenue Commissioner L. Joyce Hampers, in report of Boston Globe State House Bureau, 24 November 1981, noted that cities and towns were able to avoid more drastic spending cuts because of increased state aid and the expansion of local fees and charges, and the growth of the local property tax base via new construction.

A new economic and political relationship with education was envisioned by House Bill 6262. This was a comprehensive package for the reform of education in Massachusetts. This legislative effort, led by Representative James Collins and Senator Gerald D'Amico, was a direct outgrowth of a national mood to improve public education

and the impact of Proposition 2 1/2. Education was the issue that the politicians were willing to deal with in 1985. Thus, the original educational reform bill contained a reduction in the local school committees authority. Some additional power would have been transferred to the State Board of Education. The State Board would have had an absolute veto power over locally developed curriculum plans. The direct attack on school committee authority over local curriculum and policy was continued in the reform legislation. Furthermore, the issues of mandated class size, starting teacher salary, pre-first grade requirements, teacher competency testing, state funding of 50% of the entire cost of public education by 1989, to note a few changes, had both positive and negative implications. The Mass and MASC platforms had resolved that the legislature should provide sufficient funds to pay for programs already mandated before creating many new requirements costing hundreds of millions of dollars. The estimated cost of the original H6262 in FY 86 vary from \$300 to 800 dollars. No one really knew the full cost of H6262 Educational Reform Package.

On Tuesday, July 23, 1985, Governor Michael S. Dukakis signed into law the Public School Improvement Act of 1985, Chapter 188 of the Acts of 1985., This act was sponsored by Senator Gerard D'Amico, Representative Nicholas Paleologus and Governor Dukakis, and is the culmination of over two years of study, debate and compromises by the General Court. This final version of the educational reform package

has many of its expensive provisions as local options, thereby avoiding the full funding requirement of Proposition 2 1/2 for all state-mandated programs.

Chapter 188, the Public School Improvement Act of 1985, does offer school districts some new, although limited, opportunities and sets new responsibilities for the improvement of education. It does include an equalization formula giving a greater portion of state aid to the poorer communities of the Commonwealth, a clear recognition that educational quality cannot be based totally on the value of taxable property in a community. For example, taxable property in Fall River is \$45,000 per child while on the Cape it is \$600,000 per child. This degree of inequality is addressed by special funding for those children in the poorer school districts via Equal Educational Opportunity Grants. Specifically school districts spending below 85% of the average statewide direct service expenditure per pupil would be awarded grants equal to 1/6 the difference between the amount spent by the district and the 85% average. Districts receiving grants would be required to reduce their "gap" -- the 85% average less the amount spent by the district in the preceding year -- by 1/3 each year, including the grant, or to expend per pupil an amount equal to the amount expended in the preceding fiscal year plus a proportional share of an increase in school aid, additional assistance or tax levy.

EEO Grants are seen as a significant step in the move toward equalization, that is giving a greater portion of state aid to the poorer communities. Watertown, the subject of this study, is not eligible for any portion of the 25 million available for distribution in FY 86. Furthermore, Watertown could be one of the communities slated for a loss of Chapter 70 monies. Contained within Chapter 188 is a hold harmless reduction that the Chapter 70 minimum guarantee would be reduced by 10% annually through 1993.

John H. Lawson, Commissioner of Education, in a memorandum to school committees dated August 1, 1985, states that "the Legislature has established a \$50 million reserve in the FY 86 state budget to fund the Public School Improvement Act, which, when fully implemented will increase state aid to education by \$211 million." Watertown is eligible for a total of \$302,279, \$135,432 in FY 86 and \$93,761 in FY87 for Professional Development (teacher salaries); \$15,160 in FY86 and \$31,310 in FY87 for School Improvement(\$10 per pupil), with \$26,616 in FY87 for Horace Mann teachers. Proposition 2 1/2 represents a dramatic first step in the reconstruction of the economic and political foundation for education in Massachusetts. It also continues to erode the authority of local school committees to set local priorities for the progress of education.

CHAPTER III

DESIGN AND PROCEDURES

Introduction

As already stated tax limitation initiatives have been successful in California and Massachusetts with the passage of Proposition 13 and Proposition 2 1/2 respectively. Salmon and Alexander note that the property tax is historically abhorrent. It was considered a regressive tax, that is, the tax rate declines as the wealth of the taxpayer increases. Furthermore, the assessment procedures have proved to be at least partly subjective, creating a climate of inequitability. Regressiveness and subjectivity of the property tax, combined with its high degree of visibility forced by lump sum payments and the forcing of payment of taxes on unrealized capital gains, contributes to the success of tax limitation in both California and Massachusetts.

The review of the literature indicates that the initial impact of Proposition 2 1/2 was the disruption of the political and economic climate in Massachusetts, causing a major reduction in educational services. Subsequently, there was a readjustment of the political and economic foundation for education and all municipal services: new revenue sources and efforts at self-sustaining education services with the implementation of users' fees. Equally significant was the rapid decrease in the school age population, leading to the need for fewer buildings and teachers, enabling many communities to maintain the quantity and quality of educational services at or better than the pre-Proposition 2 1/2 era.

Overview

This study attempted to test the author's initial position on Proposition 2 1/2 encompassing a totally negative view of this tax limitation law. In order to accomplish this task, the author designed a longitudinal in-depth study of the Watertown Public Schools for the period 1980 to 1984. This longitudinal study demonstrated the impact of Proposition 2 1/2 over a significant time span, therefore allowing an objective evaluation of specific dollar ramifications in specific budget categories, coupled with positive and negative educational changes over a four year period.

Statistical Design

In this investigation, the statements were set up in "null hypothesis" form to determine the answer "could this difference exist by chance?" This researcher asked what were the chances (probabilities) that such a difference (positive or negative) could have happened "by chance." Another question raised was "How great a distance must occur before one believed/rejected the null hypothesis." One can accept at either the 95% (0.05) or 99% (0.01) level of confidence. Each hypothesis was tested at the 0.05 level of confidence.

The following procedure was utilized in this study:

1. Formulate the hypotheses for which supporting evidence was found (null hypotheses).
2. Determined the size of the sample and sample statistic.
3. Formulated null hypotheses.

4. Specified the probability
5. Constructed the test criterion.
6. Collected/analyzed sample data and calculate the appropriate statistic.
7. Made the decision to reject or accept the null hypothesis (es) or possibly "reserve judgment."

In testing the distribution of figures, a Chi-square probability test was used for hypotheses 5, while a binomial test was used for hypotheses 1 and 4, and a paired T-Test for Hypothesis 3. Using applicable tables allowed one to infer significance at the .05 level of confidence.

Hypotheses

The hypotheses tested, of which there were five, are presented for the reader. The principle hypotheses tested in this study, stated in the null form, are as follows:

Hypothesis 1: When corrected for professional personnel contract increases and cost of living increases as determined by the Department of Labor Statistics for the Greater Boston Region there was no significant difference in the total money appropriated for the Watertown Public Schools during the four year period 1980-81 to and including FY 84.

Hypothesis 2: In the first budget year following the passage of Proposition 2 1/2 in FY 82, there were no significant differences in educational services delivered to the children of Watertown when compared to FY 81.

Hypothesis 3: There were no significant differences in the pupil-teacher ratios in K-6 classrooms and 7-12 English classes for the school year 1980-81 and school year 1983-84 in the Watertown Public Schools.

Hypothesis 4: There were no significant differences in the professional personnel positions between the 1980-81 school year and the 1983-84 school year.

Hypothesis 5: There were no significant differences between the proportion of students meeting locally established basic minimum competency criteria as determined by the Massachusetts Test of Basic Skills and the Stanford Achievement Test results during the four year period to and including the 1983-84 school year.

The Community and the School System

Watertown is a municipality of four square miles, located on the Charles River and bordering Boston, Cambridge, Belmont, Waltham, and Newton. Founded in 1630, its original land mass included parts of surrounding communities that were incorporated at later dates. Watertown has recently (1980) adopted a charter which changed its selectmen/representative town meeting form of government to a town manager/town council form that designates Watertown as a city (League of Women Voters, 1979). (See Map 1, Eastern Massachusetts, and Map 2, Surrounding Communities)

The largest ethnic groups in the town are of Italian and Irish ancestry, but the next two groups of Armenian and Greek ancestry seem to be more visible due to church organizations and involvement in many of the local businesses. Their religious and economic unity allow these two groups substantial impact on community affairs.

The total 1980 population includes 65.2% identified with the single ancestry group, 26.7% with multi-ancestry group, and 8.1% not specified. Of the single ancestry group, the six leading groups in descending order were: Italian 28.2%, Irish 25.8%, English 8.5 %, Greek 5%, French 1.9%, Scottish 1.9% Armenian is considered multi-ancestry. (see Appendix B, State Monograph p. 4).

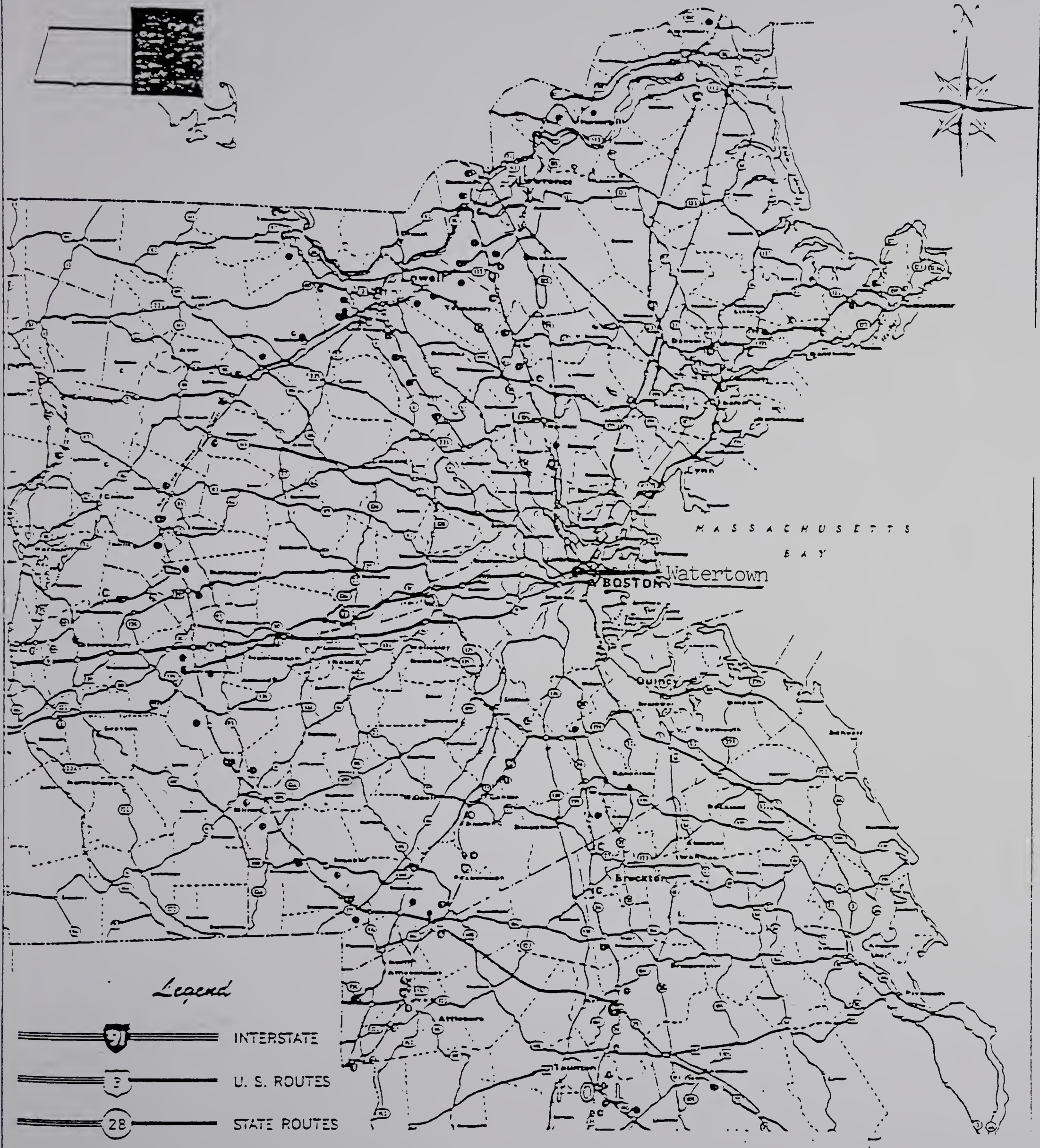
The map on the next page (p. 55) shows the geographical location of Watertown within Eastern Massachusetts.

The map on the following page (p. 56) shows the geographical location of Watertown, which is abutted by Cambridge, Belmont, Waltham, Newton and Brookline.




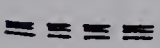
Watertown remains a stable community as far as population statistics are concerned. Percentage breakdowns today vary very little from those of 10, 25 or 50 years ago. Even as the business complexion of the town changed from heavy industrial to smaller technical and commercial concerns, population characteristics remained relatively

EASTERN MASSACHUSETTS

55



Legend

-  INTERSTATE
-  U. S. ROUTES
-  STATE ROUTES
-  PROPOSED ROUTES

State boundaries
County boundaries
Municipal boundaries

Scale of Miles



COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS

Oct.
1964



Harry D. Lord & Son
Map Publishers

unchanged. In 1950 Watertown was a major manufacturing town in the United States and had a population of 40,000. Today the population is about 35,000 and the big manufacturers are gone and have been replaced by several varied businesses, but the type of people remains very much the same.

Property values in Watertown are very high. The growth of property values within the past ten years has been as great, if not greater, in Watertown as anywhere in the Metropolitan area. Real estate prices generally range in the \$100 to \$200+ thousand for single or two family houses, an increase of 300% to 400% compared to 1974 (a ten-year period). This statistic may be the one that has the greatest impact on the community and the schools. The property that is currently being sold is not in the affordable range of normal income young families. Also, rents are getting to the level that family types can't afford. If property trends continue, there will be a change in population statistics of the schools as well as in the community as a whole. With the probability of this change, the town is facing a current school reorganization problem that has been complicated by years of reluctance by the town to accept long-range school building planning. In the years when the future was more predictable, numerous plans were postponed. Now, some long-range commitment must be made as a result of dwindling enrollments. Table 8, on the following page, shows Comparison Enrollments for the years of this study.

TABLE 8
WATERTOWN PUBLIC SCHOOLS
COMPARISON ENROLLMENTS
1981-1984

	1981	1982	1983	1984
Kindergarten	233 +7 D.kg	224 +8 D.Kg	213 +9 D.Kg.	214 +8 D.Kg
GRADE 1	193	230	226	208
GRADE 2	233	194	218	209
GRADE 3	244	229	180	221
GRADE 4	254	241	230	172
GRADE 5	273	236	239	217
GRADE 6	304	277	236	229
UNGRADED	14	20	30	36
TOTALS	<u>1755</u>	<u>1649</u>	<u>1581</u>	<u>1515</u>
GRADE 7	301	299	271	225
GRADE 8	298	286	298	264
UNGRADED	16	8	5	21
TOTALS	<u>615</u>	<u>593</u>	<u>574</u>	<u>510</u>
SENIOR H.S.				
GRADE 9	310	298	278	284
GRADE 10	304	327	274	265
GRADE 11	330	289	314	273
GRADE 12	363	290	291	290
UNGRADED	22	10	8	8
TOTALS	<u>1329</u>	<u>1214</u>	<u>1165</u>	<u>1120</u>
GRAND TOTAL	3699	3456	3320	3145

In addition to comparison of enrollments for the Watertown Public School from 1981-1984, on the preceding page, below are age and population characteristics of Watertown which are illustrated on the demographic map which follows. The geographic distribution of children of school age is important when studying any school system.

TABLE 9
WATERTOWN, MASSACHUSETTS
AGE/POPULATION CHARACTERISTICS

TOWN POPULATION BY AREA

Area A Population		Area B Population	
<u>Age</u>	<u>No. People</u>	<u>Age</u>	<u>No. People</u>
Under 5	655	Under 5	414
5 to 17	2,106	5 to 17	1,345
18 to 64	8,971	18 to 64	5,973
65 and over	2,043	65 and over	1,491
Total	13,785	Total	9,223

Area C Population		Area D Population	
<u>Age</u>	<u>No. People</u>	<u>Age</u>	<u>No. People</u>
Under 5	236	Under 5	221
5 to 17	809	5 to 17	751
18 to 64	3,957	18 to 64	3,575
65 and over	789	65 and over	1,038
Total	5,791	Total	5,585

NOTE: Source: 1980 Watertown Census

From Table 9 on the previous page, the school-age group, according to the 1980 census, ages 5 - 17, resided in the four areas shown on the map on the next page (Map #3). The number and percent of children in the four areas are:

Area A	2106	(42%)
Area B	1345	(27%)
Area C	809	(16%)
Area D	751	(15%)

Similarly, children then in the pre-school group, ages under 5, were residing in the four areas as listed below:

Area A	665	(43%)
Area B	414	(27%)
Area C	236	(15%)
Area D	221	(15%)

Comparisons of the percents of the pre-school age group and the school-age group by area of residence are quite similar and do not vary by more than one percent. This is one of the important aspects to be considered in the decision-making process in determining future school facility needs.



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MILES



The Schools

In 1980 there were six elementary schools, containing grades K - 6, two junior high schools, containing grades 7 -9, a senior high school having grades 10-12, and a small alternative high school, grades 10-12.

A month after Proposition 2 1/2 was enacted, the school committee voted to close two junior high schools, an elementary school and the alternative high school. Prior to 1980 there were twenty-five plans and alternative plans for school reorganization. However, Proposition 2 1/2 made it possible to bring about these school closings even though substantial opposition was present.

By September 1981, the Watertown Public Schools consisted of five K-6 schools, two K-8 schools and one 9-12 high school in operation.

The map (#4) on the next page shows the location of the schools in September 1981.

Even with the aforementioned school closings, enrollment decline and funding problems persisted. As previously mentioned, in 1981 there were five K through grade 6 schools that fed into the seventh grade at one of the two K through 8 schools operating in the community. Two of these schools were considered to be fully enrolled schools, while the other three had low enrollments problems. The Superintendent of Schools was charged by the School Committee to submit various reorganization plans in the fall of 1984. In December 1984, the School Committee faced the difficult decision of closing schools, the result of which was the closing of two K-6 schools.

MAP OF WATERTOWN

SCALE



Cunniff School
K-6

Lowell School

Coolidge School
K-6

West-Marshall
K-8

Brown School
K-6

Hosmer-East
K-8

High School
9-12

Phillips School
K-6

CORRECTED TO		
Jan 1, 1930	Jan 1, 1960	Jan 1, 1972
Jan 1, 1931	Jan 1, 1961	Jan 1, 1973
Jan 1, 1933	Jan 1, 1962	Jan 1, 1975
Jan 1, 1934	Jan 1, 1964	Jan 1, 1977
Jan 1, 1935	Jan 1, 1965	
Jan 1, 1936	Jan 1, 1969	
Jan 1, 1938	Jan 1, 1970	
Jan 1, 1939	Jan 1, 1971	

NOTE: CIRCLES INDICATE HALF-MILE LIMITS FROM THE ADMINISTRATION BUILDING

At the senior high level, the school department operates a comprehensive four-year high school. Through twenty-five years of town meetings, various facility replacement plans were rejected until in 1978 it was finally agreed to renovate the existing complex at a cost of \$9.7 million.

As an alternative to attending Watertown High School, a small percentage of students attend out-of-district schools, primarily Minuteman Vocational High School in Lexington. The vast majority of high school aged students attend Watertown High School, with a smaller percentage of children attending private schools by long-established tradition.

Through the town meeting years the schools were never viewed as a top priority. The percentage of town funds for education were well under the average provided by all towns. The unprecedented impact of Proposition 2 1/2 and its resultant pressure on the school program was the overriding issue of the 1980-81 and 1981-1982 school years. Forced budget restrictions followed on the two years with a state-wide 4% cap during a period of 10-12% inflation rates. Actually, the school had no budget increase on any one of these years.

From existing documents statistics for the graduating class do not seem to vary percentage-wise from year to year. About 35% are accepted to four-year schools, 18% to two-year schools, and 6% to one-year schools. This indicates that about 60% of Watertown High School graduates go on to some form of higher education. Forty percent of the students do not.

Effects of Proposition 2 1/2 on Watertown

In 1981 (FY82), one-third of Watertown's local tax revenues was for fixed costs over which local officials had no control. Examples of these fixed costs are bonded indebtedness, costs assessed by state, county and other outside authorities. Outside authorities such as the MBTA, abatements, unpaid taxes, and funding for pensions and workers' compensation. There were also inside costs over which the town had no control, such as Chapter 766 Special Education costs. Any reduction in the budget has to come from discretionary costs. Most of the remainder of the local budget supports the schools, police and fire departments. The remaining sixth of the budget covers such things as libraries, public health services, garbage collection, public housing, and the maintenance of public buildings, roads, parks, cemeteries, sewer and water pipes, and recreational facilities, enforcement of zoning, building, consumer protection, health and safety codes, and general administration. The expenditure cuts mandated by Proposition 2 1/2 fell on the two-thirds of the Watertown budget and represented losses of direct services to its citizens. The following statement by the Board of Selectmen and the budget analysis demonstrated a decrease in revenues of almost \$4 1/2 million in the first year of Proposition 2 1/2 and clearly highlights the impact of proposition 2 1/2 on Watertown.

It is the opinion of the Board of Selectmen that Proposition 2 1/2 is ill-conceived and does not address the real problem facing the taxpayers of Watertown and of the Commonwealth of Massachusetts. The overwhelming vote in favor of Proposition 2 1/2 is a reaction to the long inaction of the Massachusetts legislature in the area of serious tax reform. It is the hope of this Board of Selectmen that the Legislature will finally assume its responsibility and immediately address itself to solving the problems brought about by Proposition 2 1/2. (Town of Watertown, 1981 Annual Report).

The League of Women Voters of Watertown prepared a budget analysis dated September 18, 1980, which projected to the community the initial effects of Proposition 2 1/2 on Watertown.

Estimated Receipts for Fiscal Year 1980

Total real estate and personal property tax	\$22,597,780
Auto excise tax	1,375,000
Other local receipts (licenses, fees, water)	2,077,000
Estimated receipts from state (Cherry Sheets)	4,328,369
Other available funds (revenue sharing, free cash, gifts)	<u>2,694,516</u>
Total Estimated Receipts	\$33,072,665

Effects of Proposition 2 1/2 in the First Year

Decrease in property tax	\$ 3,389,667
Auto excise tax loss	<u>1,0232,899</u>
Total first year decrease	\$ 4,413,566
Ultimate Loss	\$ 7,957,172

Budgeted Expenditures for Fiscal Year 1980

<u>Fixed Costs</u>	
Debt and Interest	\$ 2,306,521
State & County Assessments (Cherry Sheet)	2,947,015
Veterans Benefits	84,274
Overlay (abatements)	1,878,000
Employee Benefits	<u>3,805,330</u>
	\$11,021,140

Discretionary Costs

Schools	\$10,960,524
Protections (police, fire)	4,262,227
Public Works	3,129,321
Administration & General Government	764,827
Library	624,827
Health	196,074
Recreation	286,496
Miscellaneous (conservation, construction)	800,908

Total Discretionary Costs	<u>\$21,025,204</u>
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Total budgeted expenditures	\$32,046,344
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Effects of Proposition 2 1/2 on the FY 82 School Budget

Dr. Daniel G. O'Connor, Superintendent of Schools, made a preliminary estimate of the impact of Proposition 2 1/2 on the Watertown School Department for FY 82; this estimate indicates that a \$1.7 million reduction was required in the level of the school budget. However, because of built-in costs, such as a 6% overall payraise (\$676,500) and expanded Employment Security coverage (\$50,000), it was estimated that a \$2.4 million reduction in the level of school activities would have to be met in order to obtain the limit that has been set by Proposition 2 1/2. A total appropriation of \$10,095,200 was requested for the FY82 school budget representing a 14.2% absolute dollar reduction from the FY81, and a reduction in activities by about 20.4% of FY81.

It is important to note that the school department is a personnel intensive organization. That is, most of the costs (80%) are personnel costs. A 20.4% reduction in the level of activities from the FY 81 budget meant the inevitability of personnel reductions, school consolidations, and drastic changes in the educational delivery methods. Specifically, the Watertown Public Schools had to close three schools, delete 92.6 positions, summer school or school lunches, eliminate athletics, reduce summer school, provide no support for the evening school, reduce staff at every level, reduce ancillary services, cut supplies and textbooks, and revise delivery of services mandated by Chapter 766. In addition, there was required an increase in the number

and type of user fees and an increase in the cost of these fees, including school lunches (40 - 70 cents per lunch).

The Superintendent's goal in his approach to the FY82 budget was a conscious effort to maintain some sense of quality in spite of Proposition 2 1/2. The criteria was not necessarily in priority order because decisions regarding the FY82 budget reductions in one area resulted in affecting decisions in other areas of the budget.

Superintendent's Budget Criteria Outline (1980)

- A. Search all budgetary items, other than those in the 2000 Instructional Function, and seek to reduce those which are not mandated.
 1. Seek items that cannot be effected or effected only on a limited basis.
 - a. Budgetary items dealing with the health and safety of the students.
Examples: tires for buses, disinfectant, crossing guards.
 - b. State and federal mandated programs will be, by necessity, retained. New and innovative delivery methods will be explored for possible savings.
 - 1) In-house special education classes to reduce outside placement costs.
 - 2) Analyze out-of-district tuition, transportation, and tutored cost for savings.
 - 3) EDCO and other collaboratives.
 2. Seek items that can be effected by reductions or deletions
 - a. Non-educational ancillary services will be reduced or eliminated; i.e., custodial services, maintenance personnel and staggered school opening that requires use of fewer buses.
 - b. Central office personnel and support personnel will be reduced -- use of after-school student workers to help with peak load clerical work.

- c. All new equipment and services will be deferred. Replacement items will be scrutinized more closely.
- d. Increased fees will be reduced and possibly eliminated.
- e. Athletics will be reduced and possibly eliminated.
- f. Community service programs will be reduced and possibly eliminated.

B. Search the 2000 Instructional Function.

- 1. Seek to reduce all non-mandated items.
 - a. School administrative personnel will be reduced.
 - b. Support personnel will be reduced.
 - c. A fee will be charged for evening and summer school, driver training classes equal to the direct cost of the program. (Revolving accounts)
- 2. Reduce those items which have an indirect effect upon students.
 - a. Larger classes will be required.
 - b. Reasonable consolidation of schools.
 - c. There will be a reduction of program offerings.

C. Search those items in the school budget which, by mutual agreement between the School Committee and the collective bargaining units, might be deferred through:

- 1. Cooperative efforts with the Teachers Association and Local 540.
- 2. Non-contractural "understandings" be explored; i.e., temporary agreement on sabbaticals and teaching loads/hours and non-teaching duties.
- 3. Collective bargaining on the ramifications of other changes contained within the FY 82 School Budget.

Proposition 2 1/2, passed in November when schools had been in operation for two months, required an immediate reduction in the auto excise tax. This meant a loss of \$220,000 in revenue in the existing FY 81 school budget. The Superintendent ordered a freeze on hiring of new personnel unless absolutely necessary; a ban on overtime, except for emergencies; deferral of purchases to the extent possible; and a complete halt to all but emergency maintenance projects.

The Watertown Board of Selectmen, being the administrative branch of the town government during the Proposition 2 1/2 budget process, requested that the Superintendent prepare 20%, 25% and 30% reduction budgets. The Superintendent- recommended reduction represented 37% of the \$4,513,000 total reduction required for FY82 as stated by the Commonwealth of Massachusetts Revenue Department in its Fiscal 1982 Tax Levy Limitation Sheet. A 37% reduction represented the consistent percentage Watertown's residents paid for its schools through local boards. Any further decrease of the school department's budget, below the 14.2% cut in absolute dollars or 20.4% in activities of the FY 81 budget, would require the public schools accept most of the impact of Proposition 2 1/2. A 20% reduction would require an additional \$683,174 in cuts, meaning the schools would be responsible for 52% of the total levy reduction, while a 25% reduction would have equaled 65% of the town's levy reduction, and the 30% reduction would have equaled 78% of the total of Watertown's levy reduction.

The superintendent was of the opinion a "just" and fair division of the revenue losses created by Proposition 2 1/2 between the schools and the town government should be based on the current tax rates. The school tax rate was 37% of the total tax rate. On residential property, the school tax rate was \$13.70 while the tax rate for general government services was \$23.25, for a combined residential total of \$36.95 per thousand. The Superintendent and the School Committee determined that the schools would reduce their budget by 37% of the revenue loss. The School Committee voted a \$1.7 million budget cut, expecting that the remaining 63%, or \$2.8 million, reduction should be taken by the town government, since the town government FY 81 budget had 63% of the total tax rate.

Local property tax rates are based on total expenditures offset by reimbursements and receipts. For 1980-81 these expenditures are as follows:

School Costs	\$13,067,598	(37%)
General government costs	<u>\$22,353,016</u>	<u>(63%)</u>
TOTAL	\$35,420,614	

It is important to mention that the \$13 million in FY 81 school costs were not all under the control of the Watertown School Committee. The school budget which the School Committee voted was only \$11.2 million of the \$13 million figure. The remaining \$1.8 million were fixed costs paying for such items as building insurance, health care benefits and the debt payments on school bonds.

These fixed costs are offset by federal aid, state aid and other receipts. In 1981 Watertown received \$11 million worth of such reimbursements and receipts. Some funds were required by law to reduce the general government tax rate. (Water bills and federal revenue sharing) Other funds were required by law to reduce the school tax rate. (Chapter 70 State Aid) Automobile excise tax was divided between and school and general tax rates on a 39.5% to 60.5% ratio, with the latter amount going to the general tax rate. (Annual Town Report 1981)

In 1981 \$4 million of state aid and receipts was earmarked to reduce the school tax rate, while \$7 million was earmarked to reduce the general local property tax rate. The actual amounts of money which subsequently had to be raised through the property tax were:

Schools	\$ 8,990,654	37%
General govt.	<u>\$15,224,114</u>	<u>63%</u>
	\$24,214,768	100%

It was these figures which were then used to set the school tax rate and the general tax rate and then the money which Proposition 2 1/2 addressed.. Since fixed costs and receipts were already calculated into both tax rates, this made, in the view of the school committee, the 37% to 63% ratio an equitable method of dividing the Proposition 2 1/2 loss.

CHAPTER IV

ANALYSIS AND INTERPRETATION OF DATA

Introduction:

In this investigation, an attempt was made to examine this researcher's initial position and the widely accepted belief concerning the totally negative impact of Proposition 2 1/2 on the Watertown Public Schools. This longitudinal study, 1980 through 1984, demonstrated the impact of Proposition 2 1/2 over a significant time span, therefore allowing an objective evaluation of changes in specific dollar amounts and what, if any, positive or negative educational changes had occurred over a four-year period. Watertown, being classified as one of the severely impacted communities, was ideally suited for this investigation. Essentially, the purpose of the study was to examine the impact of Proposition 2 1/2 on the Watertown Public Schools during the period 1980 - 1984. To carry out this purpose, it was decided to research the following areas:

1. To determine the statistical significance of the total money appropriated for the Watertown Public Schools during the four-year period from FY 81 through FY 84.
2. To determine the statistical significance of the differences in educational services delivered to the students of Watertown, comparing FY 81 to FY 82.
3. To determine the statistical significance of the differences in the pupil-teacher ratios in K-6 classrooms and 7-12 English classes for the school year 1980-81 and school year 1983-84 in the Watertown public schools.

4. To determine the statistical significance of the differences in the professional personnel positions between the school year 1980-81 and the 1983-84 school year.

5. To determine the academic impact of Proposition 2 1/2 by examining the statistical significance between the proportion of students meeting locally established basic minimum competency criteria as determined by the Massachusetts Test of Basic Skills and the Stanford Achievement Test results during the four year period to and including the 1983-84 school year.

Plan of the Study:

This study involved a literature review of the tax limitation impact on public education, focusing mainly on California and Massachusetts.

The town of Watertown, Massachusetts, and its public schools, with a K-12 student enrollment of 3699 in 1980-81 and 3145 in 1983-84, became the prime focus of this study.

Analysis of Data for Significance:

A major assumption that was necessary to this study, for analysis of significance, was utilization of the .05 level of confidence, which Fischer (1973) supports as the usual acceptable level of significance. The logic of Fischer, his questions and inference, were utilized in the analysis of data.

HYPOTHESIS #1

Statement of Hypothesis: When corrected for personnel contracted increases and cost of living increases as determined by the Department of Labor Statistics for the Greater Boston Region, there was no significant differences in the total money appropriated for the Watertown Public Schools during the four year period to and including FY 84.

In this investigation, an attempt was made to see if significant differences occurred in one account (the instructional) of the budget function over a four-year period. The budget functions and the amounts allocated to each function for the period 1980/81 to 1983/84 are shown on Table 10 on the next page.

The percentage of salary increases approximated the inflation rate in the Greater Boston area. For the purpose of this study, the author considers the percentage of salary increases and the rate of inflation to be identical.

Using the salary increases over the four-year period as the adjustment factor for the entire four years, this researcher arrived at the figures shown in Table 11 on the next page.

The observable pattern in the funding for instruction is two years below the baseline and one year above it.

TABLE #10
WATERTOWN PUBLIC SCHOOLS
FUNDING BY FUNCTION
1980-81 - 1983-84

FUNCTION	1980/81	1981/82	1982/83	1983/84
1000 Admin.	369,353	313,399	324,787	348,452
2000 Instr.	8,459,755	7,276,764	8,240,749	8,614,170
3000 Other Sch.Serv.	588,807	392,747	423,796	436,074
4000 Op & Maint of Plant	1,592,143	1,324,160	1,430,222	1,534,195
5000 Fixed Chrg	54,100	102,800	106,300	68,200
6000 Community Services	18,150	-0-	-0-	-0-
7000 Acquis. Fixed Assts	34,955	16,985	15,712	33,533
9000 Programs w/ other Distrcts.	774,157	823,319	821,727	760,352
TOTAL OPER.	11,916,276	10,238,582	11,301,918	11,808,781
SCHOOL RENOV.	20,000	-0-	-0-	-0-
MINUS ESTIMTD FED. RECPTS	- 167,550	- 173,605	- 173,535	- 172,860
LOCAL APPR. REQUEST	11,768,726	10,064,977	11,128,383	11,635,921

TABLE 11
FUNDING FOR INSTRUCTION
ADJUSTED

	FY 81	FY 82	FY 83	FY 84
Actual	8,459,775	7,276,764	8,240,749	8,614,170
% Increase	5.5	5.75	6.5	6.0
Adjusted	8,016,786	6,858,350	7,715,100	8,097,320
Relation to Baseline	BASELINE	BELOW	BELOW	ABOVE

HYPOTHESIS #2

Statement of Hypothesis: In the first budget year following the passage of Proposition 2 1/2 in FY 82, there were no significant differences in educational services delivered to the children of Watertown as compared to FY 81.

This researcher will treat Hypothesis #2 in a narrative descriptive fashion. The one-year time frame makes it impossible to evaluate the hypothesis statistically. Education in Watertown did suffer a major decline with the passage of 2 1/2. On a positive note, the outgoing Board of Selectmen and the Town Meeting did attempt to distribute the revenue losses caused by 2 1/2 equitably among all the town's departments. The School Department in Watertown was not alone in having major budget reductions. The 14.2% reduction in the school budget meant only the absolutely essential services would remain.

The sudden closing of three schools, combined with the reorganization of the school system to a K-6, K-8, 9-12 pattern, the deletion of 92.6 positions, the elimination of some athletics, and requiring the Summer and Adult Evening Schools to become self-supporting, created hardship and demoralized the staff, students and parents. Reductions in staff, ancillary services, supplies and textbooks were made at every level, in the hope of minimizing the obvious negative impact on the students in the Watertown public schools.

The best indicator in measuring the negative impact of budget cuts on the school system is the pupil-teacher ratio. The FY 81 budget allowed in grades K-6 one teacher for every 18, while in the FY 82 budget there

was one teacher for every 23 pupils. This represents a class size increase of 22%. The average elementary school class size increased from 22.6 in 1981 to 25.4 in 1982. Teachers had less time to provide children with individual attention, to deal with behavioral problems and disruptive students. The problem of increased class sizes was compounded by the elimination of all but one guidance counselor at the elementary level. Furthermore, the loss of system-wide Directors of Curriculum had placed a temporary halt to curriculum development. A reduction of 50% of supporting art, music, physical education instruction and the total elimination of librarians further increased the burden of the elementary classroom teacher and reduced services to children. Increased class size, combined with a severe reduction in support programs and materials negatively impacted pupils and teachers. A 40 percent reduction in central personnel, a 40 percent reduction in custodial personnel further undermined the support of the classroom.

The 7th and 8th grade programs were reduced. Drama, speech workshop and geography were eliminated, while industrial arts and home economics were scaled down. The entire music program was conducted by one teacher. In addition, the athletic program was entirely eliminated, and the guidance staff was reduced to one for all 587 seventh and eighth grade pupils. This reduction in courses and the elimination of extra-curricular activities meant the lessening of the opportunities for pupils to develop vital special interests. This interest development is essential for the students' total education and a great motivator for pupils in the 11 to 14 age category. (Massachusetts Dept. of Educa. 1980 Report, The Middle Grades)

Watertown High School, grades 9 -12, was similarly impacted by Proposition 2 1/2 which resulted in larger classes and reduction in course selection, fewer guidance staff and virtually no extra-curricular activities except for varsity athletics.

A 14.2% budget reduction required under Proposition 2 1/2 negatively impacted every level of instruction in the Watertown Schools.

Proposition 2 1/2 had a negative impact on the Watertown Public Schools' ability to meet the societal issues of racism, sexism, metropolitanization, age discrimination and the ability to provide services for special needs population. Watertown's initial 2 1/2 budget closed schools, reduced the school staff and eliminated most of the funds for educational materials and equipment. New educational materials void of sexism and dealing objectively with the issues of racism and poverty could not be ordered. Field trips and cultural exchanges could no longer be an inherent part of the educational process of making pupils aware of the cultural diversity in the Greater Boston community.

The forced reduction of 18 percent in teaching and administration staff eliminated the possibility of hiring minority faculty. With school closings, female administrators lost positions, and it became impossible to promote female staff within the school system in an effort to comply with Chapter 626 with a reduction in positions. Furthermore, reduction in force criteria was based on certification in a subject area, requiring teaching experience, and finally seniority within the area of certification. Seniority in the Watertown Schools has not been the sole

criteria for reduction in force. Seniority was the over-riding factor only when all other factors were equal. The concept of seniority promotes a condition of reverse age discrimination because reduction in force eliminates younger, less experienced teaching staff. There is an unhealthy "greening" (or "graying") of the staff. Education over the long run is better served by a staff that is age balanced through the normal events of time.

Consolidation of special needs services has become a necessary development of less expensive but effective "in house" special needs programs. Watertown has joined with neighboring communities in a united approach to service special needs pupils. Unified special needs services combined with programs such as Metropathways, a collaborative exchange program with Boston, is a small step in the direction of metropolitanization. Costs of special education continued to rise at a rate well beyond that pushed by inflation or enrollment trends.

Hypothesis 2 cannot be proven statistically based on a comparison of educational services between the Fy 81 and FY 82 . This researcher has shown in the above analysis of the 14.2 percent budget reduction required under Proposition 2 1/2 that this reduction had a significant negative impact on the overall total of educational services delivered to the children of Watertown.

HYPOTHESIS #3

Statement of Hypothesis: There were no significant differences in the pupil-teacher ratio in K-6 classrooms and 7-12 English classes for the school year 1980-81 and school year 1983-84 in the Watertown Public Schools.

The results of the comparison are as follows:

TABLE 12

COMPARISON OF PUPIL-TEACHER RATIO BEFORE AND AFTER 2 1/2
IN ELEMENTARY GRADES

School Year	Mean		t	df	p(1-tailed)
	Pupil/Teacher Pre	Ratio Post			
1981/82	21.7	23.5	3.36	6	< .01
1982/83	21.7	22.4	1.07	6	{NS}[>.30]
1983/84	21.7	22.0	0.68	6	{NS}[>.50]

NOTE: "Pre" mean of 21.7 for 1980-81 is utilized in all of the comparisons.

Single-tailed T-test, level of significance = .05

The basis for the Paired T-Test computation formulas is SPSSX: Introductory Statistical Guide by Nousis (McGraw-Hill, 1983).

The table shows a significant change in Pupil-Teacher ratio at the elementary school level in school year 1981/82, the first year of Proposition 2 1/2, while subsequent years show no significant difference over the baseline.

At the secondary level, English classes were selected as our basis because all students are required to take English as a subject each year in grades 7 - 12. Most other disciplines are elective or one- or two-year requirements. Therefore, English should provide the preferred overview of the pupil-teacher ratios.

TABLE 13
COMPARISON OF PUPIL TEACHER RATIO
SECONDARY LEVEL
ENGLISH

School Year	Mean P-T	SD	t	df	p (one-tailed)
1980/81	21.5	.95			
1981/82	23.4	1.25	3.45	2	< .03
1982/83	22.6	.89	1.28	2	> .16
1983/84	22.0	.60	-0.62	2	> .30

NOTE #1: The schools used in this study were the Hosmer East (grades 7 and 8), the West Marshall (grades 7 and 8) and the High School (grades 9 through 12).

NOTE #2: T-test is normally two-tailed in terms of a Bell shaped curve. A single-tailed T-test takes only the right or left end of the Bell shaped curve. Results are tilted or skewed negatively or positively.

As in the elementary school comparison, there was a significant difference the first post-Proposition 2 1/2 year, but not afterwards.

HYPOTHESIS #4

Statement of Hypothesis: There are no significant differences in the professional personnel positions between the school year 1980-81 and the 1983-84 school year.

The binomial formula was applied to the results; the significance level is .05. As the table shows, there seems to be no significant downward trend.

TABLE 14
IMPACT OF PROPOSITION 2 1/2 ON STAFF

Grade Level & Type Position	No. Post Prop Years HIGHER	No. Post Prop Years LOWER	Probability (Binomial Test)
I. ELEMENTARY			
A. Classroom Regular Teacher	0	3	.125
B. Classroom Special Teachers			
Art	0	3	.125
Computer	2	0	.25
Home Ec.	0	0	No change
Industrial Arts	0	0	No change
Library Media	0	3	.125
Music	0	3	.125
Phys Ed/Health	0	0	No change
Reading	0	3	.125
II. SECONDARY			
Social Studies	0	3	.125
Art	0	3	.125
Computer	NONE		
Home Ec/Child Care	0	3	.125
Industrial Arts	0	3	.125
Library/Media	3	0	.125
Music	0	3	.125
Phys Ed/Health	0	3	.125
Reading	3	0	.125
English	0	3	.125
Science	0	3	.125
Math	0	3	.125

HYPOTHESIS #5

Statement of Hypothesis: There are no significant differences between the proportion of students meeting locally established basic minimum competency criteria as determined by the Massachusetts Test of Basic Skills and the Stanford Achievement Test results during the four year period to and including the 1983-84 school year.

Basic skill tests were administered at Grades 3, 6 and 8. Grades 3 and 6 were tested with the Stanford Achievement Basic Battery. Grade 8 students completed the Massachusetts Tests of Basic Skills in Mathematics, Reading and Written Composition.

Students at grade levels 3 and 6 were required to complete a Writing Sample which required submission of two pieces of written composition. These compositions are scored by holistic procedures.

The minimum standards established by grade for the above tests are as follows:

	Min. Standard for READING	Min. Standard for MATH	Min. Standard for WRITING
Grade	Stanford Test raw score of	Stanford Test raw score of	Combined score of
GRADE 3	39 in Read Compr. and 87 in total Read + Vocab.	43 total math score samples	10 pts on 2 writing
GRADE 6	33 in Read Compr. and 82 in total Read + Vocab.	62 total math score samples	10 pts on 2 writing
GRADE 8 pts	State Test raw score 39 of 55 items	State Test raw score 39 of 59 items	Combined score of 10 on 2 writing samples

This research examined the number of students who passed or failed the tests, trying to determine if there is any significant change in test results for students in the Watertown Public Schools over the span of the study. The procedure was done independently for each grade level.

Because this was a ratio of pass to fail, the Chi-formula is used for computation. The results for grades 3 and 8 show significant differences, whereas grade 6 shows no significant change. An analysis assessing the impact of Proposition 2 1/2 on the performance of students on basic skills achievement tests is presented in Table 15 below.

TABLE 15
COMPARISON OF BASIC SKILLS SCORES

GRADE	YEAR	READING		MATHEMATICS		WRITING	
		MS	DNMS	MS	DNMS	MS	DNMS
3	1981	217	14	205	24	147	78
	1982	209	9	200	17	181	32
	1983	168	14	172	11	164	21
	1984	127	22	138	18	124	19
		χ^2 =	15.48		4.23		46.88
6		df =	3		3		3
		p =	< .01		> .05		< .001
	1981	245	33	254	27	248	37
	1982	250	27	245	30	258	28
	1983	211	33	222	22	223	17
	1984	193	16	195	12	194	12
8		χ^2 =	4.67		3.93		11.43
		df =	3		3		3
		p =	> .05		> .05		< .01
	1981	241	45	257	27	267	46
	1982	206	67	221	52	197	68
	1983	209	46	227	28	246	11
	1984	206	57	2232	42	234	30
		χ^2 =	7.86		13.33		51.41
		df =	3		3		3
		p =	< .05		< .01		< .001

CODE: MS = Met Standards DNMS = Did Not Meet Standards

CHAPTER V

RESULTS AND RECOMMENDATIONS

The Purpose

The purpose of this research was to investigate the impact of Proposition 2 1/2 on the Watertown public schools. The method of investigation was a longitudinal in-depth study involving an analysis of the school budget, the curriculum offerings, the availability of equipment and materials, trends in test data and teacher-pupil ratios over the length of the study.

Summary of Findings

Hypothesis 1: When corrected for professional personnel contract increases and cost of living increases as determined by the Department of Labor statistics for the Greater Boston Region, there was no significant difference in the total money appropriated for the Watertown Public Schools during the four-year period to and including FY 84.

The level of confidence that was considered acceptable was .05. No definite downward trend could be discerned over a period of four years. Two years were below and one year was above the base line. It is not unusual to observe the pattern found, so we would not be justified in claiming a decrease in funding over the four year period. The table does show a major decrease in the first year, but statistically over the four years studied, the hypothesis is confirmed.

Hypothesis 2: In FY 82, the first budget year following the passage of Proposition 2 1/2, there were no significant differences in educational services delivered to the children of Watertown as compared to FY 81.

Since the study covered only one year there are no statistics. The narrative section demonstrates a drop in funding in all account areas in the first year of Proposition 2 1/2.

Although there were no statistically significant effects, there were indirect subjective effects that were felt by the schools. These effects were in the area of curriculum development, alternative schools, library/librarians, staffing, and class size; and a reallocation of resources. Ultimately side agreements to collective bargaining agreements for differential staffing were undertaken.

Although the hypothesis can not be refuted statistically, it seems clear that it is not true.

Hypothesis 3: There were no significant differences in the pupil-teacher ratios in K-6 classrooms and 7-12 English classes for the school year 1980-81 and school year 1983-84 in the Watertown Public Schools.

The level of Significance is .05; paired T-Test; used one-tailed test results.

At the elementary level, comparing Pre-Proposition 2 1/2 with each of the subsequent three budget years, significant results were demonstrated for the first year after Proposition 2 1/2, as summarized in Table 12 on page 81. Comparing the base year with the second and

third years after Proposition 2 1/2 , the statistics revealed no significant differences.

In Table 13 on page 82 a comparison of pupil-teacher ratios at the secondary level, for English classes, shows a significance only in the first year after Proposition 2 1/2.

One can conclude that taken over a period of four years there was no significant difference. The original null hypothesis is supported by the statistical analysis.

Hypothesis 4: There are no significant differences in the professional personnel positions between the school year 1980-81 and the 1983-84 school year.

The binomial test was used. Level of significance was .05.

Table 14 shows that being considerably higher than the .05 level of significance, there was no significant downward trend in professional positions in the period 1980/81 - 1983/84 school years.

The hypothesis is accepted.

Hypothesis 5: There are no significant differences between the proportion of students meeting locally established basic minimum competency criteria as determined by the Massachusetts Test of Basic Skills and the Stanford Achievement Test results during the four year period to and including the 1983-84 school year.

Table 15 on page 85 shows for grade 3 a significant difference in the areas of reading and writing, but not in math. In grade 6, the statistics show no significant difference in reading and math scores, but do show a significant difference in writing scores. In grade 8 there were significant differences in all areas, reading, writing and math.

What does the difference mean? On a year to year basis a general trend to improve or to fall behind was not evident. It is difficult to draw conclusions concerning the differences in basic skill scores because they are averages. Since there are mixed results, the hypothesis is not generally accepted, and thus rejected.

Issues

In dealing with null hypothesis, over period of four years, there is a requirement to mention that different populations were involved. There was a different sample of generally different students who took the test during each of the four years. Although some members of the sample in grade six might have been members of the grade 3 sample early on, there were also a number of students moving in and out of the school system, about 590 each year. The overall sample population would be sufficiently different that we cannot assume the same population.

Holistic scoring in the writing sample also leads to different figures. Although all scorers consider the same criteria and resolve major differences between and among themselves, differences of one degree are generally averaged out.

Different forms of the state test at grade 8 between the initial and the final tests is another area which might affect the results. The test was modified, which might have a major effect on scores, or on the other hand might have had no effect at all.

The entire Watertown School curriculum was revised during the period of the study, with greater emphasis being placed on writing skills. This also may have affected scores.

General Literature Supporting Findings

Mulkeen (Education and Urban Society, August 1984, p. 226) observed that the impact of Proposition 2 1/2 and the decline in school population were intertwined. "It is not yet known whether the Commonwealth's schools are better or worse, or whether or not the taxpayers are satisfied with educational services." This researcher's systematic longitudinal study examined some of the key issues.

Barbara Anderson, Executive Director of Citizens for Limited Taxation, reviewed the impact of Proposition 2 1/2 (Boston Globe, 7-11-83). She corrected a series of misconceptions concerning the implication of 2 1/2. First, revaluation and the corresponding increase in some residential property taxes was court-mandated. All communities had until 1983 to comply with full assessments of all property at 100% of fair market value. "Propositon 2 1/2 was a tax cap, not a tax cut." The post Proposition 2 1/2 era saw a rise in property values of 42% while property taxes were capped at a maximum of 2 1/2 percent annually. Furthermore, the state had to control its own spending in order to increase aid to the local communities, a major impact of proposition 2 1/2 at the state level. Finally, Barbara Anderson noted that "the infrastructure" has not been devastated by Proposition 2 1/2 cuts. Massachusetts' per-pupil expenditure had increased in the post 2 1/2 era, largely caused by declining enrollment. All community services were quickly returned to pre-proposition 2 1/2 levels and in many communities the levels were expanded.

Ralph Whitehead, Jr., Professor of Journalism at University of Massachusetts at Amherst, an anti-2 1/2 activist, agrees with Barbara Anderson that Proposition 2 1/2 has changed attitudes in Massachusetts and that it was a revolutionary act with both negative and positive effects. (Charles Kenney, Globe Magazine, page 68)

"Massachusetts has a dirty little secret," says Whitehead. "Some of our greatest years have been the years of 2 1/2. A lot of people think it, but few will admit it."

Proposition 2 1/2 was a grass-roots insurgency, a plebiscite that fundamentally altered the relationship between the state's citizens and their leaders. In the view of U. Mass. professor Whitehead, 2 1/2 revived a sense of accountability among political leaders.

"What struck me about the state in the '70s was that politicians here were a professional cast," says Whitehead. "They had created their own tribal culture and really didn't have to be terribly responsive. There were at least two tribes --a traditionalist tribe, represented by assorted ethnic political insiders, and there was the reformist tribe, led by the arrogant figure of Dukakis I [as the governor and his first term are known on Beacon Hill; Dukakis and his second term are known as Dukakis II]. And the traditionalists weren't accountable, and the reformists weren't accountable. And Proposition 2 1/2 really shifted the center of the universe from the back rooms of Pier 4 and the public-policy classrooms of the elite universities and put it back where it belonged --in the hands of voters."

As heretical as it may sound, Whitehead also believes that Proposition 2 1/2 has been very good for the Democratic Party. "It is forced the Democrats to adopt a new strategy for addressing public problems and the strategy is using your head rather than reaching instinctively for your wallet," says Whitehead. "They still spend money, but they now spend smart money. The raw day-by-day conditions of 2 1/2 have allowed Massachusetts Democrats to evolve into what is now as advanced as any Democratic party in the country. Now, that might not be saying much in this day and age, but..."

"What 2 1/2 made people in public life do was think," he continues. "It said to politicians: 'You've got to pay attention, you've got to think. You can no longer paper over social conflict with money the state doesn't have.' Proposition 2 1/2 forced politicians to play the ingenuity card, to be resourceful."

Without 2 1/2, Whitehead speculates, in Massachusetts today "we would be on our way to becoming a banana republic...We were headed to a point in our politics where the Hatfields and the McCoys would have looked like great statesmen by comparison."

Richard A. Kraus, state senator from Arlington (Boston Globe, Dec. 29, 1985) attempts to kill the "Taxachusetts" vampire. The tax burden in Massachusetts has generally been at or below the national average except for the period from 1970 - 1977. In 1977 the tax burden peaked at 9 percent higher than the national average. By 1982, "Taxachusetts" was dead with the tax burden declining to just below the national average. By 1984, the Massachusetts revenue burden continued to decline to 19.4 percent below the national average. Kraus predicts that by 1987 with the repeal of the state surtax the decline should become 18% below the national average.

James Simon, Associated Press, reported on five years of Proposition 2 1/2 (Boston Globe, November 3, 1985), lending perspective to this researcher's data analysis, results and conclusions. Property taxes have fallen from the highest in the United States to 17th overall. Two opponents of Proposition 2 1/2 in 1980, Richard Manley, President of the Massachusetts Taxpayers Foundation, and James Segel of the Massachusetts Municipal Association, view 2 1/2 as having many more positive aspects than imagined in 1980. A significant shift in the state funding the needs of local communities and limiting the state ability to impose mandates, for example. "Increased state financing has been the key to making Proposition 2 1/2 work."

An expanding Massachusetts economy had created enough new revenue from the growth taxes of sales income and business that the Legislature was able to fund yearly increases in local aid.

Simon observed several potential dangers. For example, we are now beginning to think that the 2 1/2 percent ceiling is too high, with average cost of a single family home increased to the \$100,000+ range. Furthermore, the continuation of large federal deficits would surely mean an end to Federal revenue sharing of \$130 million and any slow-down in the state economy would reduce the state's ability to return money to the local communities.

Town of Watertown's Comparative Revenues and Expenditures(80/84)

The 1983-84 Town of Watertown Annual Report presents a comparison of revenue sources and types of expenditures between 1980 and 1984 fiscal years.

The charts on the next two pages will serve to clarify trends within major categories of revenues and expenditures. The condition of town finances provides a crucial backdrop for placing the schools in proper perspective with the many other community services.

Revenue Sources in 1980 and 1984

Source of Revenue	1980		1984	
	Amount	% of Total	Amount	% of Total
Property & Other Tax	21,379,529	(66.0)	21,432,411	(61.4)
Motor Veh. Ex. Tx	1,736,520	(5.4)	952,249	(2.7)
State Aid	4,475,947	(13.8)	7,809,111	(22.4)
Fed. Revenue Shar.	1,101,080	(3.4)	1,276,252	(3.7)
Water Sewer Chrg	937,571	(2.9)	1,369,374	(3.9)
Interst on Invstmt	1,140,638	(3.5)	712,452	(2.0)
Lic., Permits, Fines	226,891	(0.7)	290,261	(0.8)
Municipal Skating	170,052	(0.5)	173,690	(0.5)
Other Revenues	1,206,997	(3.7)	905,921	(2.6)
	<hr/>		<hr/>	
TOTAL	32,375,225		34,921,721	

Expenditures in 1980 and 1984

Types of Expenditures	1980		1984	
	Amount	% of Total	Amount	% of Total
General Govt.	1,015,825	(3.2)	1,292,888	(3.7)
Pensions	2,979,678	(9.4)	3,914,428	(11.2)
Group Health Insr.	746,558	(2.3)	1,297,409	(3.7)
Other Insurance (Workers Comp, Unemp. Bldg Liability)	316,362	(1.0)	389,243	(1.1)
Town Debt Payment	1,715,000	(5.4)	1,265,000	(3.6)
Public Safety	4,705,062	(14.7)	5,285,999	(3.9)
Health, Human Serv. Recreation	1,290,142	(4.1)	1,352,546	(3.9)
Public Works	3,031,368	(9.5)	3,279,887	(9.4)
Schools	11,471,274	(36.0)	12,162,655	(34.9)
State & County Chrg	2,946,331	(9.3)	3,100,102	(8.9)
Overlay Account	1,622,360	(5.1)	1,490,370	(4.4)
	<hr/>		<hr/>	
TOTAL	31,839,960		34,830,527	

The revenue chart on the previous page demonstrates a decreased reliance on the property tax with a corresponding significant increase in state aid in the percentage of the total budget from 1980's 13.8 percent to 1984's 22.4 percent.

The expenditures comparison shows a decrease in the percentage of the total budget allocated to schools. Increases in health care costs, pension costs and refuse disposal costs have significantly impacted the budget.

Town Manager Peter F. Boyer's philosophy is reflected in the chart and he stated that "stabilizing revenues and expenditures and protecting Watertown's financial interest have been key areas of concentration throughout 1983-84. In an effort to meet those objectives, my tenure as Town Manager has been characterized in fiscal terms by a careful spending, conservative borrowing philosophy, in the context of a guarded belief about future fiscal relief."

Curriculum Chairmen's Assessment of Effects of Proposition 2 1/2

In the fall of 1985, the Assistant Superintendent of the Watertown Schools requested all curriculum chairpersons to file a report concerning the effects or impact of Proposition 2 1/2 on their respective departments during the 1980 - 1985 (Fall) school years. These reports were based on some factual data but were primarily subjective observations of middle management people responsible for teacher supervision and evaluation and general administrative functions.

These observations were professional, non-scientific evaluations, but increased the creditability of this researcher's data analysis and conclusions.

The Curriculum Chairperson in English clearly viewed the first year of Proposition 2 1/2 as causing a "state of disarray" in the language arts program. A series of factors, such as staff reduction, general insecurity creating low morale, moving the 9th grade into the high school, limitations on ordering materials, and most important, larger classes were cited. The Chairperson noted that the many problems were compounded by the administrative reorganization of K-12 Directors of Instruction to 7-12 Department Chairpersons, breaking the needed liaison between the elementary and the secondary programs. A very negative short term view of the impact of Proposition 2 1/2.

The Chairperson's long-range view of the English Department becomes very positive. "We have learned to be creative money managers and resilient professionals. Our recent past is dotted with one success after another in both the elementary and secondary programs." The implementation of a uniform program of vocabulary, handwriting, literature, grammar and usage, and composition is flourishing throughout the school system. Reduction in enrollment and the hiring of new staff have reduced class sizes. A very positive pupil-teacher ratio, new texts and educational materials at all grade levels, and regular in-service programs have invigorated the English/Language Arts department.

The Curriculum Chairperson in Reading stated that declining enrollments have improved pupil-teacher ratios. He believes that each elementary school has the services of a full-time reading teacher with an additional one and a half reading teachers. "Proposition 2 1/2 caused hardshipby reducing staff and available funds. However, in some ways, it enables us to be more resourceful and creative in educating the children in our schools."

The Curriculum Chairperson in Mathematics complains of the decrease in younger staff members and the lack of funds for sabbatical leaves and the attendance at national conferences. "Overall, however, the mathematics program is stronger and more vital than in 1980." The entire K-12 mathematics curriculum was reviewed and revised. This revised curriculum was strengthened by the purchase of new textbooks, calculators and computers to be utilized on a K-12 basis. All 7th and 8th grade students were given instruction in the Logo computer language.

The Curriculum Chairperson in Science feels the science program lost some "ground" since the passage of Proposition 2 1/2. He stressed the lack of funds for field trips, staff attendance at conferences, more advanced science courses and the failure to upgrade and improve laboratory equipment on a planned basis. "On the plus side, we've implemented a strong K-6 science program with an engaging text and moderate support materials."

The Curriculum Chairperson for Foreign Languages claims negative impact from Proposition 2 1/2 caused by leaves of absence and the discontinuance of the German elective. Students' failure to elect German as their choice of a foreign language and teacher's desire for leaves of absence for career exploration and maternity had very little to do with Proposition 2 1/2.

The Foreign Language Chairperson was pleased that the new graduation requirements allowed foreign language courses to fulfill communications and humanities requirements. Furthermore, students have been given the opportunity to take fifth-year Spanish, Italian and French courses, creating a comprehensive foreign language program involving grades 7-12.

The Chairperson in Business Education/Technology states that "Proposition 2 1/2 has not affected the operation of the business department in any negative manner. Drastic changes which have taken place in the last five years have been the result of advancements in educational theory and practice because of technology." The Chairperson was able to open an education laboratory in April of 1984 to promote computer assisted instruction encompassing accounting, office technology, data processing, computer literacy and programming. This laboratory was a major advancement in business educational technology at Watertown High School, coming subsequent to the purchase of additional computer terminals and word processors in December of 1983.

The Curriculum Chairperson for Art stated that "Proposition 2 1/2 has certainly created a strain in our curriculum in that the cutting of staff and greater limiting of funds has curbed us in achieving the full measure of our goals, but it has not devastated us. In some ways it has served us -- We have had to become conservative, resourceful and creative in our solutions to lack of funds, fewer staff and less staff development."

The Curriculum Chairperson in Library Media Services noted that in the first year of Proposition 2 1/2, they lost 39% of their staff and suffered a 75% reduction in budget for books, films and supplies. There was a general reduction in library media services. Subsequently capital outlay funds have allowed the replacement of dated and outmoded equipment. Basic library skills are taught at all grade levels and cable technology and studio production activities are in full operation.

Summary

This longitudinal study of the impact of Proposition 2 1/2 on Massachusetts, with the primary focus the Watertown Public School System clearly illustrates some loss of services for FY-82. There is no clear statistical evidence to demonstrate an overall degeneration in educational services, nor significant increase in pupil-teacher ratio, nor drastic reduction in professional staff. Neither is there any proven impact on minimum competency test levels. Evidence indicates that the public schools in Watertown suffered a single year of decline and subsequently restored or even improved services.

Recommendations

1. Procedures and training be established for teachers, administrators and school committee members to completely comprehend the impact of budgets on programming.

2. School business managers and superintendents should become aware of the implications of tactical and strategic planning as a budgeting and programmatic process.

3. As necessary state funding increases, with a corresponding decrease in local tax revenues, Chapter 70 monies should no longer be reimbursed subsequent to expenditures but should be totally funded up front.

4. The percentage of the state's funding increases will require local communities to clearly state educational goals.

5. Local school committees should establish a form of sunset legislation which would require all programs to be evaluated. Evaluation of programs would result in their continuation, modification or rejection.

6. With respect to this study itself, the following recommendations are made:

a. This study was restricted to one community; it might be of interest to do similar studies for several additional communities with varied size and demographic factors.

b. The study was restricted to a base year and a three-year subsequent period. A further investigation at the end of ten years might lead to different conclusions; or it might not.

c. This study did not take into account any psychological impact of the changes wrought by Proposition 2 1/2 on faculty, students, parents or community at large. A study designed to investigate the psychological impact might prove of great interest.

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APPENDICES

ACTS, 1980. - Chap. 580.

Chap. 580. AN ACT LIMITING STATE AND LOCAL TAXATION AND EXPENDITURES.

Be it enacted by the People and by their authority:

SECTION 1. Chapter 59 of the General Laws is hereby amended by inserting after Section 21B the following new section:

SECTION 21C (1) The total taxes assessed under any provision of this chapter by the commonwealth or by any city, town, county, district, authority or other governmental entity upon real estate and personal property as defined in this chapter shall not, in any fiscal year, exceed two and one-half percent of the full and fair cash valuation thereof unless, at a biennial general election or at a general election called by the general court for the first Tuesday after the first Monday in November in a year in which a biennial general election is not held, not less than two-thirds of the persons voting on the question shall vote "Yes" to the following question:

Shall the present (two and one-half percent or such other percent as shall then be in effect pursuant to this Section) limit on the assessment of real estate and personal property taxes with respect to this city (or town) be increased to _____ percent for the fiscal year _____?

YES

NO

(2) Notwithstanding the provisions of sub-section (1), if in any city or town the total taxes assessed upon real estate and personal property as defined in this chapter shall exceed two and one-half percent of the full and fair cash valuation thereof on the effective date of the enactment of this section, the total taxes so assessed shall be reduced annually by not less than fifteen percent of such total for each successive fiscal year until the total taxes so assessed shall not exceed the said two and one-half percent.

(3) Notwithstanding the provisions of sub-section (1); if in any city or town the total taxes assessed upon real estate and personal property as defined in this chapter in the fiscal year 1979 were less than two and one-half percent of the full and fair cash valuation thereof in such fiscal year, that lesser percentage shall be the maximum percentage of full and fair cash valuation at which such total taxes may be assessed under section one and if between the fiscal year 1979 and the effective date of the enactment of this section the total taxes so assessed shall have increased above the said lesser percentage, the total taxes so assessed shall be reduced annually by not less than fifteen percent of such total for each successive fiscal year until the total taxes so assessed shall not exceed the said lesser percentage.

(4) Notwithstanding the provisions of sections (1), (2) and (3), the total taxes assessed by the commonwealth or by any city, town, county, district, authority or other governmental

entity upon real estate and personal property as defined in this chapter shall not, in any fiscal year, with respect to any city or town, exceed the total taxes so assessed in the preceding fiscal year by more than two and one-half percent unless, at a biennial general election or at a general election which shall be called by the general court for the first Tuesday after the first Monday in November in a year in which a biennial general election is not held, not less than two-thirds of the persons voting on the question shall vote "Yes" to the following question:

Shall the total taxes assessed on real estate and personal property with respect to this city (or town) in the fiscal year _____ be increased by _____ percent of the total taxes so assessed in the preceding fiscal year rather than by the present two and one-half percent limit on such increase?

YES

NO

(5) If the legislative body of any city or town shall so vote, or if the people by local initiative procedure shall so require, there shall appear on the ballot for such city or town at a biennial general election or at an election which shall be called for the first Tuesday after the first Monday in November in a year in which a biennial election is not held, the following question:

Shall the present (two and one-half percent or such other percent as shall then be in effect pursuant to this Section) limit on the assessment of real estate and personal property taxes with respect to this city or town be decreased to _____ percent for the fiscal year _____?

YES

NO

If a majority of the persons voting on the question shall vote "Yes" the limit on total taxes assessed as set forth in sub-section (1) shall be decreased to the percentage so voted for that fiscal year.

SECTION 2. Chapter 29 of the General Laws is hereby amended by inserting after section 27B the following new section:-

SECTION 27C. Notwithstanding any provision of any special or general law to the contrary:

(a) Any law imposing any direct service or cost obligation upon any city or town shall be effective in any city or town only if such law is accepted by vote or by the appropriation of money for such purposes, in the case of a city by the city council in accordance with its charter, and in the case of a town by a town meeting, unless the general court, at the same session in which such law is enacted, provides, by general law and by appropriation, for the assumption by the commonwealth of such cost, exclusive of incidental local administration expenses and unless the general court provides by appropriation in each successive year for such assumption.

(b) Any law granting or increasing exemptions from local taxation shall be effective in any city or town only if the general court, at the same session in which such law is enacted, provides by general law and by appropriation for payment by the commonwealth to each city and town of any loss of taxes resulting from such exemption.

(c) Any administrative rule or regulation which shall result in the imposition of additional costs upon any city or town shall not be effective until the general court has provided by general law and by appropriation for the assumption by the commonwealth of such cost, exclusive of incidental local administration expenses, and unless the general court provides by appropriation in each successive year for such assumption.

(d) Any city or town, any committee of the general court, and either house of the general court by a majority vote of its members, may submit written notice to the division of local mandates, established under section six of chapter eleven of the general laws, requesting that the division determine whether the costs imposed by the commonwealth by any law, rule or regulation subject to the provisions of this section have been paid in full by the commonwealth in the preceding year and, if not, the amount of any deficiency in such payments. The division shall make public its determination within sixty days after such notice.

(e) Any city or town, or any ten taxable inhabitants of any city or town may in a class action suit petition the superior court alleging that under the provisions of subsections (a), (b) and (c) of this section with respect to a general or special law or rule or regulation of any administrative agency of the commonwealth under which any city or town is required to expend funds in anticipation of reimbursement by the commonwealth, the amount necessary for such reimbursement has not been included in the general or any special appropriation bill for any year. Any city or town, or any ten taxable inhabitants of any city or town may in a class action suit petition the superior court alleging that under the provisions of subsections (a), (b) and (c) of this section with respect to any general or special law, or rule or regulation of any administrative agency of the Commonwealth which imposes additional costs on any city or town or which grants or increases exemptions from local taxation, the amount necessary to reimburse such city or town has not been included in the general or any special appropriation bill for any year. The determination of the amount of deficiency provided by the division of local mandates under subsection (d) of this section shall be prima facie evidence of the amount necessary. The superior court shall determine the amount of the deficiency, if any, and shall order that the said city or town be exempt from such general or special law, or rule or regulation of any administrative agency until the commonwealth shall reimburse such city or town the amount of said deficiency or additional costs or shall repeal such exemption from local taxation.

(f) Any of the parties permitted to submit written notice to the division of local mandates under subsection (d) of this section may submit written notice to the division requesting that the division determine the total annual financial effect for a period of not less than three years of any proposed law or rule or regulation of any administrative agency of the commonwealth. The division shall make public its determination within sixty days of such notice.

The provisions of this section shall not apply to any costs to cities and towns or exemptions to local taxation resulting from a

decision of any court of competent jurisdiction, or to any law, rule or regulation enacted or promulgated as a direct result of such a decision.

SECTION 3. Chapter 11 of the General Laws is hereby amended by striking out section 6 and inserting in place thereof the following section:-

Section 6. The state auditor may appoint and remove such employees as the work of the department may require. Said employees shall be organized in five divisions, namely, the division of state audits, the division of authority audits, the division of federal audits, the division of contract audits and the division of local mandates. The state auditor shall establish the salaries, duties and personnel regulations of all officers and employees within the department of the state auditor; provided, however, that the salaries of said officers and employees shall not exceed the sum annually appropriated therefor by the general court. The provisions of sections nine A and forty-five of chapter thirty, chapter thirty-one and chapter one hundred and fifty E shall not apply to officers and employees within the department of the state auditor.

SECTION 4. Chapter 11 of the General Laws is hereby amended by inserting after section 6A the following new section:-

Section 7. The division of local mandates, as provided for in section six of this chapter, shall have the responsibility of determining to the best of its ability and in a timely manner the estimated and actual financial effects on each city and town of laws, and rules and regulations of administrative agencies of the Commonwealth either proposed or in effect, as required under section twenty-seven C of chapter twenty-nine of the general laws.

The division shall have the power to require the chief officer of any appropriate administrative agency of the commonwealth to supply in a timely manner any information determined by the division to be necessary in the determination of local financial effects under said section twenty-seven C. The chief officer shall convey the requested information to the division with a signed statement to the effect that the information is accurate and complete to the best of his ability.

The division, when requested under the provisions of subsections (d) and (f) of said section twenty-seven C, shall update its determination of financial effects based on either actual cost figures or improved estimates or both.

SECTION 5. Chapter 4 of the General Laws is hereby amended by inserting after section 4A the following section:

Section 4B. At any time after the expiration of three years from the date on which any optional provision of the General Laws has been accepted in any city or town, whether by official ballot, by bylaw, by ordinance or by vote of the legislative body of the city or town, or by vote of the board of selectmen or school committee of a town, the revocation of such acceptance of any optional provision of the General Laws may be effected in the same manner as was the original vote to accept the said pro-

visions, but such revocation shall be subject to the following restrictions:

(a) This section shall not apply if the optional provision contains, within itself, another manner of revocation.

(b) This section shall not apply to any optional provision which authorizes, but does not require, the city or town to act.

(c) This section shall not apply to any action taken under chapter thirty-two or thirty-two B of the General Laws.

(d) This section shall not apply to any action taken to establish a regional district, authority or other entity which involves another city, town, district or other governmental entity.

(e) This section shall not affect any contractual or civil service rights which have come into existence between the city or town and any officer or employee thereof as a result of the original acceptance of any optional provision of the General Laws, provided, however, such revocation shall apply to the successor to the incumbent officer or employee.

(f) If a petition signed by five percent or more of the registered voters of a city or town is filed in the office of the city or town clerk within sixty days following a vote other than a vote taken by voters on an official ballot to revoke the acceptance of any optional provision of the General Laws, requesting that the revoking of such acceptance be submitted as a question to the voters of such city or town, said vote to revoke shall be suspended from taking effect until such question is determined by vote of the registered voters voting thereon at the next regular city or town election, or if the city council or board of selectmen or other authority charged with calling elections shall so direct, at a special election called for that purpose. Petitions filed requesting the placement of the question or revocation on the ballot for determination by the voters shall be substantially in conformity with the provisions of the law governing the signing of nomination papers for city or town officers, as to the identification and certification of names thereon, and submission to the registrars thereof. A brief summary of the relevant section or sections of the General Laws shall also appear on the official ballot. If such revocation is favored by a majority of the voters voting thereon, the acceptance of said optional law shall be revoked and it shall become null and void beginning with the first day of the month next following said vote of revocation. The question to be placed on a ballot shall be essentially as follows:

Shall the acceptance by _____ (City, Town) of section(s) _____ of chapter _____ of the General Laws be revoked?

YES

NO

If, on the sixty-first day following the date a vote has been taken to revoke the acceptance of an optional provision of the General Laws, and no petition as aforesaid has been filed, the vote to revoke shall become effective forthwith.

SECTION 6. Chapter 71 of the general laws is hereby amended by striking out in Section 16B, as most recently amended by chapter 823 of the Acts of 1977, the last two sentences.

SECTION 7. Chapter 71 of the General Laws is hereby amended by striking out Section 34, as most recently amended by Chapter 194 of the Acts of 1979, and inserting in place thereof the following:

SECTION 34 Every city and town shall annually provide an amount of money sufficient for the support of the public schools as required by this chapter, provided however, that no city or town shall be required to provide more money for the support of the public schools than is appropriated by vote of the legislative body of the city or town.

SECTION 8. Section 23C of Chapter 59 of the General Laws is hereby amended by striking out in the third paragraph the words "and any penalty required to be raised under the provisions of Section 34 of Chapter 71."

SECTION 9. Section 1 of Chapter 60A of the General Laws, as most recently amended by Section 87 of Chapter 514 of the Acts of 1978, is hereby further amended by striking out in the first sentence the words "except that no rate fixed hereunder shall be in excess of sixty-six dollars per thousand of valuation" and inserting in place thereof the following:- except that no rate fixed hereunder shall be in excess of twenty-five dollars per thousand of valuation as determined by the valuation formula in effect in the year nineteen hundred and seventy-nine.

SECTION 10. Section 4 of Chapter 1078 of the Acts of 1973, as most recently amended by Chapter 154 of the Acts of 1979, is hereby repealed.

SECTION 11. Section 3 of Chapter 72 of the General Laws, as most recently amended by Chapter 599 of the Acts of 1977, is hereby further amended by adding after Part B (8) the following new sub-paragraph:

(9) In the case of an individual who rents his principal place of residence in the Commonwealth, an amount equal to fifty percent of such rent.

SECTION 12. Chapter 59 of the General Laws is hereby amended by adding after section 20 the following section:-

SECTION 20A No county, district, public authority or other governmental entity authorized by law to assess costs, charges or fees upon cities or towns may increase the total of such costs, charges or fees with respect to any city or town in any fiscal year by more than four percent over the total of such costs, charges or fees for such city or town for the preceding fiscal year. No city, town, county, district, public authority or other governmental entity shall make any charge or impose any fee for goods provided or services rendered in excess of the cost of furnishing such goods or providing such services.

SECTION 13. The provisions of this act are severable, and if any of its provisions or an application thereof shall be held unconstitutional by any court of competent jurisdiction, the decision of such court shall not affect or impair any of the remaining provisions or other applications thereof.

OFFICE OF THE SECRETARY,

Boston,

December 4, 1980

I hereby certify that the foregoing law entitled "AN ACT LIMITING STATE AND LOCAL TAXATION AND EXPENDITURES," was approved by the People at the State Election held on November 4, 1980, pursuant to the provisions of Article XLVIII of the Amendments to the Constitution, as amended by Article LXXIV of said Amendments.

MICHAEL JOSEPH CONNOLLY,
Secretary of State.

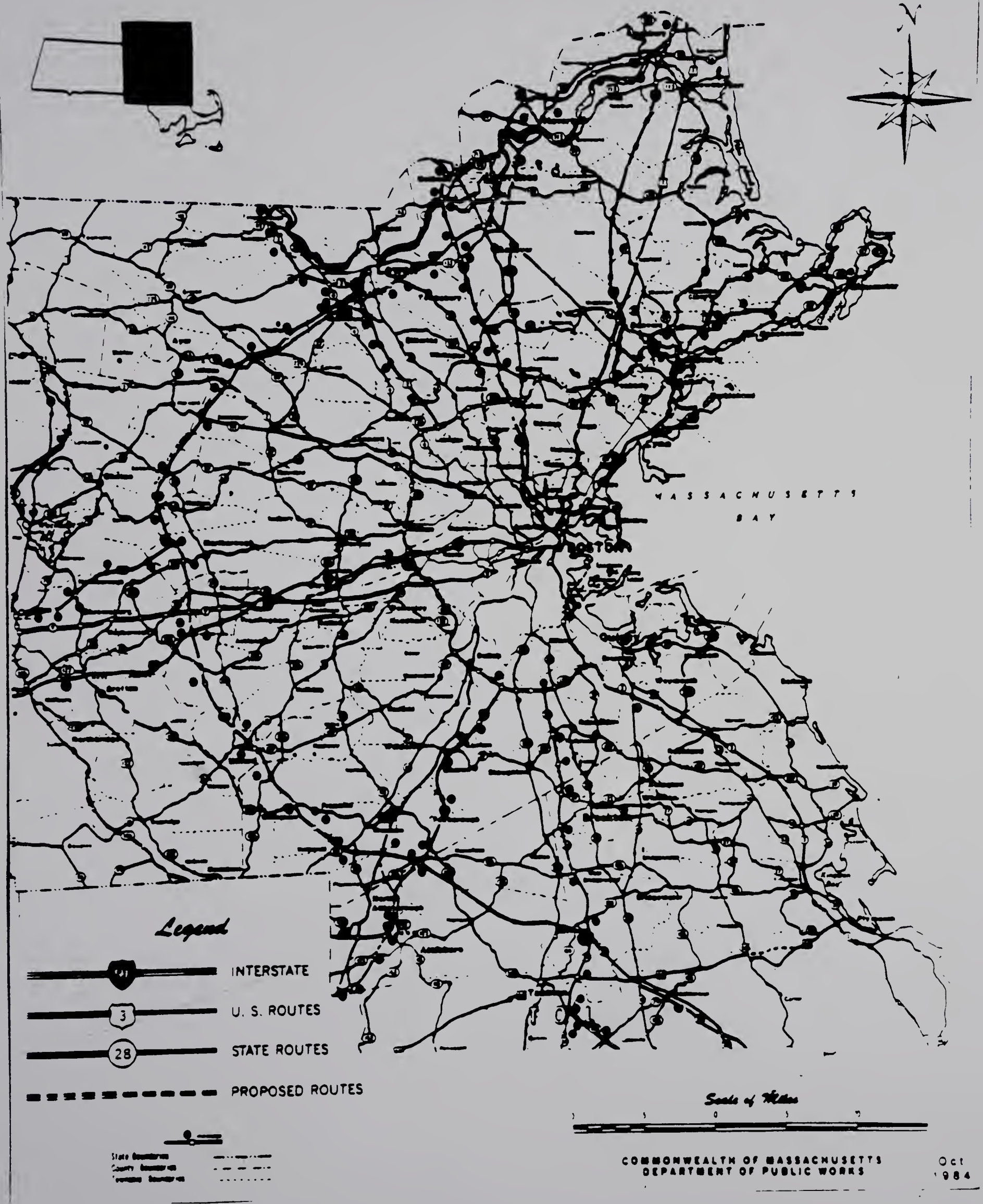
Watertown

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Monograph prepared by
Fred J. Gibney
Research Specialist
Massachusetts Department of Commerce
100 Cambridge Street
Boston, Massachusetts 02202

EASTERN MASSACHUSETTS

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WATERTOWN

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1. GENERAL INFORMATION

1. Town: Watertown
2. County: Middlesex
3. Location: Eastern Massachusetts, 6 miles northwest of Boston on the Charles River. bordered by Belmont and Cambridge on the north, Boston and Newton on the south, and Waltham on the west. It is 215 miles from New York, 36 miles from Worcester and 22 miles from Lowell.
4. Population: 1980 - 34,384
 - a. Sex Composition: Female - 18,842 (54.8%), Male - 15,542 (45.2%)
 - b. Projections: 1985 - 33,400; 1995 - 32,200; 2005-31,900
1990 - 32,400; 2000 - 32,000; 2010-31,800
5. Area:(in sq. miles) Land - 4.06 Water - 0.11 Total - 4.17
6. Density: 1980 - 8,469 persons per square mile (land area)
7. Climate: Normal temperature in January - 29.9° F.
Normal temperature in July - 73.7° F.
Normal annual precipitation - 42.77 in.
8. Elevation at City Hall: 30 feet above mean sea level
9. Topographical Characteristics: Almost entirely densely settled with open areas devoted to parks, cemeteries and similar uses. Some hills, soil is moist and of good texture.
10. U.S.G.S. Topographical Plates: Lexington, Newton
11. Aerial Survey Photos: Information on the availability of aerial survey photos for sections of the state may be obtained from the Geodetic Survey Division, Mass. Dept. of Public Works, 100 Nashua St., Boston, MA. 02114.

Watertown
October, 1984

GENERAL INFORMATION (cont.)

- B. 1. Established as
a Town: September 7, 1630 (Julian)
- C. 1. Type of Government: Town Council - Town Meeting
2. Special Districts: 8th Massachusetts Congressional District
3rd Councillor District
Middlesex and Suffolk State Senatorial
Districts
32nd Middlesex State Representative
District
Boston Standard Metropolitan Statistical
Area
Metropolitan Water, Park and Sewer
Districts
Massachusetts Bay Transportation Authority.

II POPULATION - U.S. CENSUS - 1980

A-1

During the decade 1970 to 1980, the population of Watertown decreased by 4,923, or 12.5%. There was an estimated excess of births over deaths of 982 and an estimated out-migration of 5,905.

B-1

NUMBER OF PEOPLE

Year	Number	Percent of 1930	
		Watertown	SMSA
1920	21,457	61.5	86.3
1930	34,913	100.0	100.0
1940	35,427	101.5	102.0
1950	37,329	106.9	111.6
1960	39,092	112.0	121.1
1970	37,307	112.6	130.6
1980	34,384	107.7	124.5

B-2

AGE COMPOSITION

Age	Number	Percent of total	
		Watertown	SMSA
Under 5	1,542	4.5	5.2
5 - 14	3,533	10.3	13.7
15 - 19	2,514	7.3	9.6
20 - 64	21,437	62.3	59.0
65 - over	5,358	15.6	12.5
Under 18	7,065	20.5	24.4
21 & over	26,343	76.6	69.4
Median Age		33.0	31.3

B-3

ANCESTRY-ETHNIC-RACIAL DATA

Groupings	Number	Percent of	
		Watertown	SMSA
White	33,717	98.1	91.2
Black	159	0.5	5.8
Am. Ind., Eskimo, Aleut,	16	0.0	0.1
Asian & Pacific Islander	285	0.8	1.3
Other	207	0.6	1.5
Hispanic/Spanish Origin	607	1.8	2.4

Of the total 1980 population 65.2% identified with the single-ancestry group 26.7% with the multi-ancestry group, and 8.1% not specified. Of the single-ancestry group, the 6 leading groups in descending order were: Italian (28.2%), Irish (25.8)%, English (8.5%), Greek (5.0%), French (1.9%), Scottish (1.9%).

B-4

EDUCATION (Persons 25 yrs. old & over)

	Watertown	SMSA
Median No. of School years Completed	12.7	12.8
Completing less than 5 grades	3.2%	2.2%
Completing High School only	36.5	36.2
Completing College or more	25.9	24.7

POPULATION - U.S. CENSUS - 1980 (cont.)

B-5 OCCUPATION

Of the 28,845 persons 16 years old and over in Watertown 19,215 or 66.6% were in the civilian labor force. Of these 49.4% were females and 50.6% were males.

Group	Number Emp.	Percent of Total	
		Watertown	SMSA
Exec., Adm., Mgr.	1,901	10.2	12.4
Prof. Specialty	3,824	20.6	17.6
Technicians & Related	790	4.3	3.9
Sales	1,400	7.5	9.6
Adm. Support, Clerical	4,043	21.8	20.7
Pvt. Hshld.	58	0.3	0.4
Protective Service	356	1.9	2.1
Service (ex. hshld. & Protective)	1,735	9.3	10.9
Farming, Fishing, Forestry	43	0.2	0.5
Precision Production, Craft & Repair	2,075	11.2	9.7
Mach. Opers., Assemb. Inspectors	1,369	7.4	6.3
Transp. & Mat'l Moving Handlers, Cleaners, Helpers, Laborers	437 538	2.4 2.9	2.8 3.1

B-6 POLITICS, PARTY AFFILIATION, 1982

	Number	%
Total Registered VOTERS	18,755	
Registered Democrats		61.9%
Registered Republicans		11.8
Unenrolled Voters		26.3

B-7 INCOMES

	Families	% of Families	
		Watertown	SMSA
Under \$5,000	327	3.8	5.7
\$5,000-\$9,999	842	9.9	10.3
\$10,000-\$19,999	2,458	28.8	25.4
\$20,000-\$34,999	3,452	40.5	35.8
\$35,000-\$49,999	998	11.7	14.3
\$50,000-over	447	5.2	8.5
Total Families	8,524		
Median Family Income		\$22,097	\$22,848
Per Capita		\$8,180	\$8,182

Watertown
October, 1984

III HOUSING - U.S. CENSUS, 1980

A-1 The 1980 U.S. Census reported that Watertown had 13,582 housing units of which 22 (0.2%) were vacant, seasonal and migratory and 13,560 (99.8%) were year-round housing units. Of the year-round units, 6,241 (46.0%) were owner-occupied, 7,010 (51.8%) were rented and 299 (2.2%) were vacant.

B-1 TYPE OF STRUCTURE

	Number	Percent of Total	
		Watertown	SMSA
1 Unit	4,758	35.1	46.2
2 Units	5,233	38.6	14.9
3 & 4 Units	1,577	11.6	13.7
5 or more	1,986	14.6	24.9
Mobile Home/ Trailer	6	0.1	0.2

B-2 NEW CONSTRUCTION *

Year	Number
1979	163
1980	11
1981	388
1982	32

B-3 AGE

Year Built	No. Units	Percent of Total	
		Watertown	SMSA
1970-Mar. 1980	761	5.6	11.8
1960-1969	1,266	9.3	13.5
1950-1959	1,741	12.8	14.1
1940-1949	1,872	13.8	10.0
1939 or earlier	7,920	58.4	50.6

B-4 PERSONS PER UNIT

Persons	Units	Percent of Units	
		Watertown	SMSA
1 person	3,426	25.9	26.3
2 persons	4,621	34.8	29.9
3 persons	2,215	16.7	16.1
4 persons	1,579	11.9	14.0
5 persons	814	6.1	7.7
6 persons or more	606	4.6	5.9
Median persons/ unit		2.28	2.3

B-5 VALUE OF ONE-DWELLING-UNIT-STRUCTURE

	No. Units	Percent of Total	
		Watertown	SMSA
Under \$20,000	51	1.3	2.6
\$20,000-\$49,999	1,112	23.8	35.7
\$50,000-\$99,999	3,350	71.6	50.6
\$100,000-\$199,999	161	3.4	10.0
\$200,000 or more	2	0.0	1.1
Median Value		\$61,900	\$58,700

B-6 GROSS MONTHLY RENTS

	Units	Percent of Units	
		Watertown	SMSA
Under \$100	271	3.8	7.4
\$100 to \$149	115	1.6	5.1
\$150 to \$199	177	2.5	13.9
\$200 to \$499	5,829	82.2	66.7
\$500 & Over	550	7.8	4.9
No Cash Rent	148	2.1	2.0
Median Rent		\$352	\$281

* From building permits issued

IV ECONOMIC BASE

A. HISTORIC TRENDS

Watertown was settled and incorporated as a town in 1630. It is believed to be the oldest town in Middlesex County. Its original boundaries included the present towns of Waltham and Weston, and parts of Belmont, Cambridge and Lincoln. Originally, Watertown was one of the best agricultural towns in the County. Its soil was fertile and varied, and with a market at its doors, farming became the principal occupation. Proximity to Boston brought about residential development which took up much of the agricultural land. Grist mills made an early appearance along the Charles River, whose falls provided natural water power. In 1803, a mill manufacturing crude cotton material was established. Industrial development was given a tremendous boost in Watertown when in 1816 a site on the Charles River was chosen for a United States Arsenal. The Walker and Pratt Company supplied the Union with ammunition and gun-carriage castings during the Civil War. Among other goods manufactured in Watertown during the 19th century were paper, tan bark, soap, candles, and cottonwarp and cotton sail duck. 1896 saw the completion of the initial structure of the Hood Rubber Company.

B. PRESENT ECONOMY

1. General

Today, Watertown is a diversified center. In 1982, 885 units reported to the Massachusetts Division of Employment Security. These units employed an average of 16,555 persons in 1982 and had annual payroll of \$293,053,579.

2. Manufacturing

Manufacturing is by far the largest source of employment. In 1982, 107 units reported an average of 6,435 persons employed and had an annual payroll of \$123,975,636. The leading industrial groups based on employment were fabricated metals, instruments, machinery (except electrical), and electric and electronic equipment.

3. Trade

In 1982, 58 wholesale units employed an average of 895 persons and had an annual payroll of \$16,684,421; while 204 retail units employed an average of 1,939 persons and had an annual payroll of \$18,884,355.

Watertown
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ECONOMIC BASE (cont.)

3. Trade (cont.)

The 1977 U.S. Census of Business reported the following Retail Trade data for Watertown and the Boston SMSA:

	<u>Watertown</u>	<u>Boston SMSA</u>
Establishments	278	21,210
Sales	\$118,200,000	\$9,553,604,000
Per Capital Sales	\$3,384	\$3,342
Paid Employees in workweek including March 12	1,751	198,626

Classification of Business	Estab.	Sales (Add 000)	% of Total	Estab.	Sales (Add 000)	% of Total
Building Matl., Hardware, Farm Equipment Dealers	8	10,744	9.0	758	345,705	3.6
General Merchandise Group	10	(D)	(D)	547	1,321,049	13.8
Food Stores	45	21,285	18.0	2,743	2,072,242	21.7
Automotive Dealers	19	32,678	27.6	987	1,400,860	14.7
Gasoline Service Stations	28	9,568	8.1	1,710	597,649	6.3
Apparel, Accessories Stores	15	4,468	3.8	1,713	612,582	6.4
Furniture, Home Furnishings, Equipment Stores	22	6,518	5.5	1,528	386,706	4.0
Eating & Drinking Places	54	6,376	5.4	4,609	1,010,683	10.6
Drug Stores, Proprietary Stores	9	(D)	(D)	819	308,201	3.2
Misc. Retail Stores	68	12,509	10.6	5,796	1,497,927	15.7

(D) Withheld to avoid disclosure

4. Class of Worker

The 1980 U.S. Census of Population, which reported information on the basis of residence rather than place of employment, showed that there were 14,789 private wage and salary workers, 2,557 Government workers, 775 self-employed and 44 unpaid family workers living in Watertown.

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October, 1984

V EMPLOYMENT AND PAYROLLS as reported to the DIVISION OF EMPLOYMENT SECURITY
-1982-

A. ALL INDUSTRIES

SIC CODE	Industry	No. of Units	Annual Payroll	Employment		Rank
				Average	Distribution	
01-07	Agriculture & Services	7 Units included in Services				
08	Forestry	-	-	-	-	-
09	Fisheries	-	-	-	-	-
10-14	Mining	-	-	-	-	-
15-17	Construction	89	16,376,868	716	4.3	7
20-39	Manufacturing	107	123,975,636	6,435	38.9	1
41-47	Transportation	23	28,723,971	1,157	7.0	5
48	Communication	1 Unit included in Services				
49	Utilities	2 Units included in Services				
50-51	Wholesale Trade	58	16,684,421	895	5.4	6
52-59	Retail Trade	204	18,884,355	1,939	11.7	3
60-62	Finance	8	4,746,716	358	2.2	8
63-64	Insurance	10	901,760	46	0.3	(D)
65-67	Real Estate	35	1,862,431	145	0.9	(D)
70-89	Services	259	47,602,700	3,232	19.5	2
91-97	Govt (local, State/Fed.)	12	33,294,721	1,630	9.8	4
	Total	805	293,053,579	16,555	-	-

B. MANUFACTURING

SIC CODE	Group	No. of Units	Annual Payroll	Employment	
				Average	Distribution
20	Food & Kindred Products	2	Units included in Misc. Mfg. Ind.		
21	Tobacco Manufactures	-	-	-	-
22	Textile Mill Products	1	Unit included in Misc. Mfg. Ind.		
23	Apparel & Finished Goods	8	1,452,343	106	1.6
24	Lumber & Wood Prod.	2	Units included in Misc. Mfg. Ind.		
25	Furniture & Fixtures	1	Unit included in Misc. Mfg. Ind.		
26	Paper & Allied Prod.	1	Unit included in Misc. Mfg. Ind.		
27	Printing & Publishing	16	1,587,718	97	1.5
28	Chemicals & Allied Products	5	2,570,952	98	1.5

EMPLOYMENT (cont.)

B. MANUFACTURING (cont.)

SIC CODE	Industry	No. of Units	Annual Payroll	Employment	
				Average	Distribution
29	Petroleum & Coal Products	1 Unit included in Misc. Mfg. Ind.			
30	Plastic & Rubber Products	4	3,864,129	191	3.0
31	Leather & Leather Products	1 Unit included in Misc. Mfg. Ind.			
32	Stone, Clay & Glass Products	3 Units included in Misc. Mfg. Ind.			
33	Primary Metal Ind.	2 Units included in Misc. Mfg. Ind.			
34	Fabricated Metal Ind.	15	7,290,922	382	5.9
35	Machinery (except) Electrical	12	27,234,520	1,254	19.5
36	Electric & Elec- tronic Equip.	14	49,081,762	2,521	39.2
37	Transportation Equip.	2 Units included in Misc. Mfg. Ind.			
38	Instruments & Re- lated Equip.	11	25,037,649	1,437	22.3
39	Misc. Manufacturing	22	5,855,641	350	5.4

(D) Withheld to avoid disclosure.

NOTE: Units - Number of operations of different industrial activity within a municipality, regardless of corporate affiliation.

VI MUNICIPAL FINANCE

PROPOSITION 2 1/2, adopted by the voters of the Commonwealth in 1980, imposes a limit on local taxes on real and personal property equal to 2 1/2% of the full and fair cash value of the property being taxed.

A breakdown of the net debt (30 June 1983) shows that 68.3% was for schools, 28.3% urban renewal, 2.8% a skating rink, 0.6% street plans.

TAX RATE (Per \$1,000 Val.)

FY	Amount	Full Value
1984	\$21.40	\$23.33 (P)
1983	21.10	23.81
1982	31.00	34.10

TAX LEVY

FY	Amount	Per Capita**
1984	\$21,742,558	\$632
1983	20,440,602	594
1982	20,574,462	598

EST. FULL VAL. OF TAXABLE PROP. *

FY	Amount (add 000)	Per Capita **
1982	\$858,400	\$24,965
1980	603,000	17,537
1978	417,000	12,128

TOTAL NET DEBT, 30 JUNE

FY	Amount	Per Capita**
1983	\$7,245,000	\$211
1982	8,560,000	640
1981	10,185,000	296

* Estimated by law by the Massachusetts Bureau of Local Assessment biennially
 ** Based on 1980 U.S. Census
 (P) Proposed

VII EDUCATION

There are no ratings of public schools.

Distribution of 344 high school graduates (Class of 1982): 42% went on to 4-yr. college, 16% to 2-yr. college, 33% to work, 4% to other educational facilities, and 4% to the military or not specified.

Higher educational facilities include 70-odd within the Boston SMSA of which it is a part and those in the adjacent Lowell and Lawrence-Haverhill SMSA's to the north.

Children Attending School, Grades K-12 - - 1 Jan. 1983

Attending Public School	3,570
Attending Private School	494
Total	4,064

Teachers in Local Public Schools FY 1982	249
Pupil-Teacher Ratio FY 1982	14.9
Integrated Cost Per Pupil (1981-1982)	\$2,736

VIII TRANSPORTATION

A. GENERAL

Watertown's proximity to Boston where rail connections may be made to all parts of the United States and Canada, precludes the necessity of passenger train stops in the town. The public roads and highways meet the needs of modern transportation

The town is a member of the Massachusetts Bay Transportation Authority, a state agency, established to assure adequate mass transportation facilities.

B. RAIL

Freight service only is provided by the Boston and Maine Railroad and Conrail. Piggy-back service is available in Boston on both lines. Rail commuter service is provided in nearby Newton and Belmont by the Massachusetts Bay Transportation Authority with the B & M as operating agents.

C. HIGHWAY

The network of numbered highways serving the town may best be understood by consulting the map accompanying this monograph. Principal highways serving the area are U.S. Route #28 and State Route #16.

D. BUS

The town is served by the Massachusetts Bay Transportation Authority which provides bus, rapid transit, trolley, trolley bus and train service in various combinations to 79 municipalities.

E. OTHER

Established truck lines provide competitive service locally and to distant points. Watertown is within commuting and trucking distance to the Logan International Airport, Boston docks, railroads and terminals thus providing land, ocean and air carrier service.

IX ECONOMIC DEVELOPMENT

A. ORGANIZATIONS

Watertown Industrial Development Commission, Town Hall, Watertown, 02172.
Watertown Redevelopment Authority, 463 Arsenal St., Watertown, 02172.
Watertown Chamber of Commerce, 75 Main St., Watertown, 02172.

B. LABOR SUPPLY

Current data on labor supply in the Newton employment area, of which Watertown is a part, may be obtained from the local office of the Division of Employment Security, 290 Centre St., Newton, 02158.

C. AVAILABLE BUILDINGS AND SITES

For specific data contact organizations above or Division of Economic Development, Massachusetts Department of Commerce and Development, 100 Cambridge Street, Boston, Mass. 02202.

X. PLANNING

A. GENERAL

The town of Watertown has a planning board. Sub-division control powers are exercised by the Board of Survey. A master plan has been completed with the use of federal funds. The town is a member of the Metropolitan Area Planning Council.

B. ZONING

The zoning by-law was last amended in 1982, but a summary of its dimensional requirements is not feasible in this publication.

C. BUILDING CODE

The Commonwealth has adopted a state building code which supercedes all local regulations.

XI UTILITIES

A. ELECTRIC SERVICE

Boston Edison Company, 800 Boylston St., Boston, 02199

B. GAS SERVICE

Boston Gas Company, One Beacon Street, Boston, 02108.

C. WATER SERVICE

Water service is supplied to the town of Watertown by the Metropolitan District Commission from surface water sources. A chemical analysis of a sample taken in 1981 by the Massachusetts Department of Environmental Quality Engineering showed the following results:

	<u>Milligrams per liter</u>
	<u>Tap in</u>
	<u>Town Hall</u>
Turbidity	0.4
Color	15.0
pH	8.3
Alkalinity	10.0
Hardness	18.0
Calcium	3.5
Magnesium	0.7
Sodium	7.8
Potassium	0.9
Iron	0.12
Manganese	0.00
Sulfate	9.0
Chloride	8.0
Ammonia - N	0.00
Nitrate - N	0.2
Copper	0.09
Spec. Cond.	79.0

